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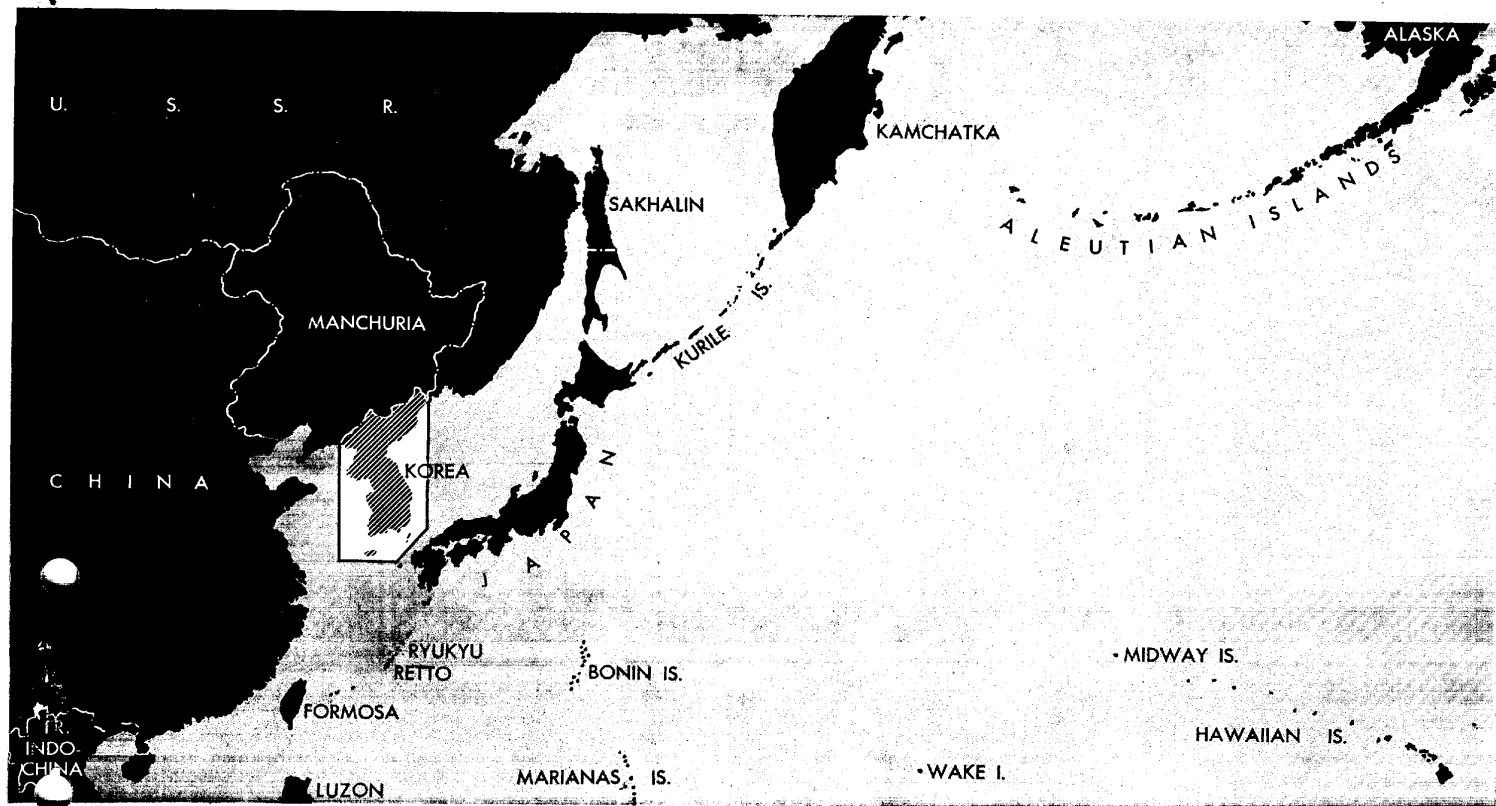
CHAPTER VIII

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JOINT ARMY-NAVY INTELLIGENCE STUDY

OF

KOREA

(INCLUDING TSUSHIMA AND QUELPART)

CITIES AND TOWNS

APRIL 1945

List of Effective Pages, Chapter VIII

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Chapter VIII

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CITIES AND TOWNS

80. General Description

A. Pattern of urban settlement.

The 80 Korean cities and towns which had 10,000 or more inhabitants in 1937 showed a distribution closely related to that of the total population. Most of them are near the coast, and they are progressively more numerous and more closely spaced as one moves from north to south. The west-central area contains the 2 largest cities, Kyongsong (Keijō) and P'yongyang (Heijō), and represents the chief concentration of urban population in Korea. (FIGURE VIII - 129).

The cities and towns described in this chapter are divided into 4 groups, the southern, west-central, northwestern, and northeastern, and are treated in that order. Korean place names are used wherever possible, with the Japanese forms in parentheses. Confusion is likely to arise because of similarity in spelling, and special care must be taken to differentiate between Ch'ongju, Chongju, and Chonju; and between Songjin and Ch'ongjin. The aerial photographs used are so recent that it has been impossible to prepare detailed interpretations of them.

B. Degree of urbanization.

The 80 centers had in 1937 a combined population of 3,250,000, or 14% of Korea's total population of 22,800,000. The urban proportion of the population has been advancing rapidly in recent years, but is still well below that of more highly industrialized countries such as Japan proper or the United States. The west-central area was the most highly urbanized, with 25% of its population living in cities; 17% and 11% of the populations of the northeastern and southern areas, respectively, lived in cities. Although southern Korea has half the cities of the entire country, it is a predominantly rural area with a large agricultural population.

C. Function.

The following list indicates in general terms the leading functions of the 34 cities and towns described in Chapter VIII:

PORTS

Inch'on (Jinsen, Chemulpo)	Mokp'o (Moppo)
Kunsan (Gunzan)	Yosu (Reisui)
Cheju (Saishū)	Wonsan (Genzan)
P'ohang-dong (Hokō-dō)	Najin (Rashin)
Pusan (Fusan)	Songjin (Jōshin)
Masan (Masan)	Unggi (Yūki)
Chinnamp'o (Chinnampo)	Ch'ongjin (Seishin)

MILITARY AND NAVAL CENTERS

Chinhae (Chinkai)	Hamhung (Kankō)
Hoeryong (Kainei)	Nanam (Ranan)

MINING CENTER

Musan (Mozen)

INLAND COMMERCIAL CENTERS

Kaesong (Kaijō)	Kwangju (Kōshū)
Ch'ongju (Seishū)	Sunch'on (Junt'en)
Taejon (Taiden)	Taegu (Taikyū)
Chonju (Zenshū)	Haeju (Kaishū)

DIVERSIFIED CENTERS

Kyongsong (Keijō, Seoul)
P'yongyang (Heijō)
Sinuiju (Shingishū)

INDUSTRIAL CENTERS

Hungnam (Kōnan)
Kyomip'o (Kenjiho)

TRANSPORT CENTERS

Chongju (Teishū)
I-ri (Ri-ri)

Several of the ports, notably Inch'on, Chinnamp'o, Wonsan, and Ch'ongjin, are also important industrial centers. Najin, Yosu, and Wonsan figure as military centers, as a large share of their port development has been for military or naval purposes. Hungnam and Kyomip'o are specialized industrial ports as well as factory sites; Taegu, Hamhung, and Nanam are secondarily important as political centers. Kyongsong, the capital, is also a major industrial, commercial, military, and transport center; and P'yongyang and Sinuiju are similarly varied in function.

D. General characteristics.

(1) Physical characteristics.

Korean cities and towns, which differ radically from western cities, are themselves mixtures of widely different old Korean and modern Japanese forms, with a few features imported directly from western countries.

The typical old Korean town or unaltered section of a city is a complex of narrow crooked streets and of irregular blocks densely covered with small houses and courtyards. Houses occupy 2, 3, or 4 sides of a square around a courtyard; the pattern thus created has a honeycomb appearance from the air. Roofs are of thatch, or, in better houses, of tile, and are supported by wooden corner posts; most walls are of mud and wattle construction. In many houses the base of the walls is protected by a lime surfacing studded with small stones. (FIGURE VIII - 1).

Japanese residential areas generally have more regular street patterns with wider streets. Houses are mostly of wood or wood-and-plaster construction; they are usually larger than Korean houses and rectangular in shape. Blocks may be nearly as densely covered as in Korean sections, but the pattern from the air appears much coarser and more regular.

Commercial and industrial sections are not well marked, especially in the smaller towns, as shops often occupy the fronts of houses and many industries are carried on in the home. Only the largest cities have department stores and office buildings. Modern factories are rapidly increasing in number, and in most cases contrast sharply with their surroundings; some of the major factories have their own workers' dormitories.



FIGURE VIII - 1. P'yongyang.

Northern outskirts of city. 1922. Typical Korean settlement, showing type of house construction and crowded conditions.

Public buildings, which are usually of modern stone construction, are the most substantial city structures; most of them are centrally located, with the exception of schools, which are often on the outskirts. Churches are more numerous than in most Oriental countries, and closely follow Western models.

(2) Buildings of possible military use.

Several Korean cities have large permanent garrisons for Japanese military and naval forces; gendarmerie posts with a few barracks are present in many cities. Schools are generally large, substantial buildings, suitable for billeting; other possible billets are public buildings and factory workers' barracks. There are a few modern hotels in the larger cities; Korean and Japanese inns are small and have limited facilities.

Nearly all cities have at least 1 hospital; those under provincial or mission management are usually the largest and best-equipped. Many of the mission hospitals are reported closed, and figures for bed capacity must be used with caution as they often designate floor space for mats or cots rather than beds.

In most cities, and especially in the ports, commercial warehouses offer storage facilities; these are generally of wooden construction with corrugated iron roofs, and most of them are served by rail sidings. Many cities have warehouses run by the Army and by the Monopoly Bureau, a government agency concerned with the manufacture and distribution of tobacco, narcotics, and certain other commodities. Other storage facilities are in industrial plants.

(3) Utilities and other facilities.

Electric power is the only utility which is widely distributed. Large new hydroelectric plants in the mountains of northern Korea are the chief producers, and transmission lines run from them to nearby centers and to central Korea. Southern Korea has several smaller hydroelectric plants and a less extensive network of transmission lines. Steam plants are located in several port cities and at a few inland points near coal mines.

The cities and larger towns have public water systems, most of which have storage reservoirs and treatment plants; com-

paratively few houses have outlets, however, and the public hydrant is the usual source of water. Large urban areas are without service of any kind. Wells supplement the municipal systems.

Only the largest cities have gas and ice plants, and these have few customers. River and lake ice is cut in the winter, but is unsafe for human consumption.

Korean houses are usually heated by means of wood stoves with flues running under the floors; heavy flat stones cover the flues and retain the heat. The Japanese rely chiefly on portable charcoal braziers.

Telephone and telegraph lines form a close network over Korea, and serve all the cities described; service is controlled from the post office in nearly all cities. However, telephone outlets are available only to officials, large concerns, and wealthy individuals; even in large cities the exchanges are small, and in some towns there may be only five or six outlets. Some 10 cities have long-wave radio stations, and many others have specialized stations of various types.

The few motor vehicles in Korea are generally used in only the largest cities. Carts rather than trucks move most intra-city freight, and rickshaws and bicycles carry most of the passengers.

Most cities are concentrated in such small areas that busses are not needed and intra-city bus services are rare. Major cities and outlying communities are in some cases connected by bus lines. Only Kyongsong, P'yongyang, and Pusan have street-car lines.

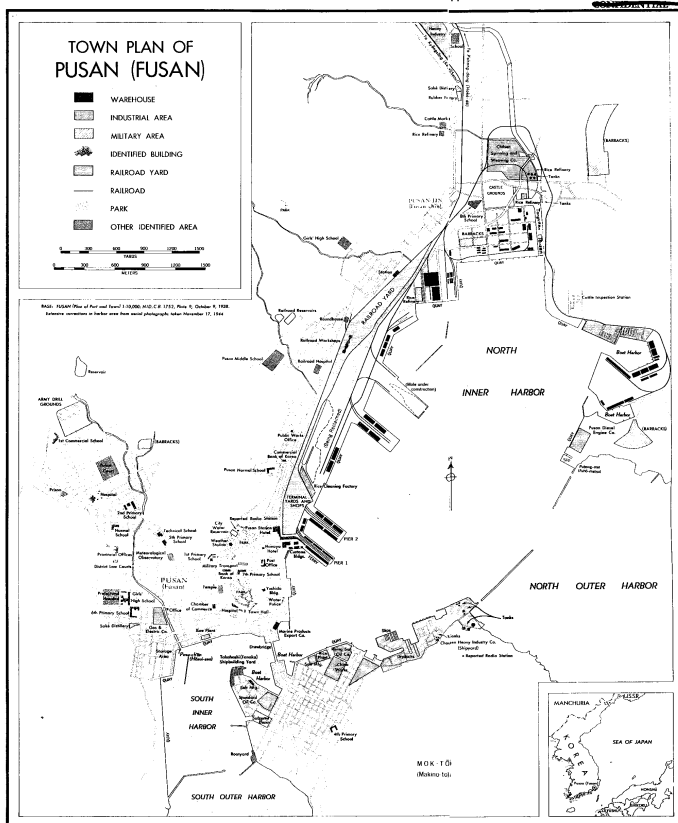
E. Major cities and towns treated.

The latest available population figures for leading cities and towns are given in the following 2 tables. The 2 groups are designated as "fu" and "yu" by the Japanese, a distinction roughly comparable to that between city and town.

TABLE VIII - 1

POPULATION OF 20 KOREAN CITIES

KOREAN NAME	JAPANESE NAME	TOTAL POPULATION 1940	PERCENTAGE OF INCREASE, 1937-1940	JAPANESE POPULATION 1939
Kyongsong	Keijō	935,464	32	138,023
P'yongyang	Heijō	285,965	54	35,652
Pusan	Fusan	249,734	17	51,802
Ch'ongjin	Seishin	197,918	194	15,733
Taegu	Taikyū	178,923	61	20,735
Inch'on	Jinsen	171,165	68	14,593
Wonsan	Genzan	79,320	24	10,205
Hamhung	Kankō	75,320	13	9,615
Kaesong	Kaijō	72,062	28	1,860
Chinnamp'o	Chinnampo	68,676	40	6,523
Kwangju	Kōshū	64,520	12	7,878
Mokp'o	Moppo	64,256	3	8,587
Haeju	Kaishū	62,651	29	6,080
Sinuiju	Shingishū	61,143	20	8,861
Chonju	Zenshū	47,230	11	5,933
Taejon	Taiden	45,541	14	9,472
Chinju	Shinshū	43,291	23	2,732
Kunsan	Gunzan	40,553	-5	9,540
Najin	Rashin	38,319	58	5,769
Masan	Masan	36,429	12	5,689



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CITIES AND TOWNS

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TABLE VIII - 2
POPULATION OF 14 KOREAN TOWNS

KOREAN NAME	JAPANESE NAME	TOTAL POPULATION 1937	LATER ESTIMATES	JAPANESE POPULATION 1937
Hungnam	Kōnan	58,077	140,000 (1941)	18,139
Cheju	Saishū	36,260	37,500 (1939)	717
Yosu	Reisui	31,259		3,407
Ch'ongju	Seishū	30,143		3,023
Songjin	Jōshin	23,496		3,879
Sunch'on	Junten	23,462		2,404
Hoeryong	Kainei	22,821		3,275
Unggi	Yūki	22,085		2,683
I-ri	Ri-ri	21,335		4,163
Nanam	Ranan	21,258	22,500 (1939)	7,042
Kyomip'o	Kenjiho	20,051	25,000 (1939)	3,818
Chinhae	Chinkai	18,988		4,588
P'ohang-dong	Hokō-dō	15,250		2,589
Chongju	Teishū	12,502		1,082

F. Glossary.

The following Korean and Japanese words are used in the text:

KOREAN	JAPANESE	ENGLISH
-ch'on, -gang,	-sen, -kō,	river
-kang	-kawa (-gawa)	river
-do	-tō	island
-dong	-dō	village
-gak	-kaku	cape
-man	-wan	bay
-p'o	-ho	inlet
-p'o	-kō	harbor
-ri, -ni	-ri	village
-sa	-ji	temple
-san	-san (-zan)	mountain, hill
	-dai	hill
	-fu	city
	-kaikyō	strait
	-ku	town
	-tori (-dori)	street

81. Southern Korea

A. Introduction.

The 6 provinces of Southern Korea make up a densely settled region containing nearly half the total population.

The proximity of Southern Korea to Japan is responsible for the rapidly rising strategic importance of Pusan (Fusan). As more and more Japanese shipping is sunk, greater reliance is being placed on the double-track railroad which runs from Pusan to Manchuria and North China. Neighboring ports, notably Yosu and Masan, are important alternates for Pusan, and the Chinhae naval base protects the straits between Korea and Japan. Other cities in Southern Korea are rice-shipping ports, each serving a small hinterland, or inland commercial centers.

Favored by a comparatively mild climate and having large areas of nearly level land at low elevations, the area has for centuries had a highly developed agricultural economy. However, it is poorly endowed with mineral resources and water power, and has been for the most part neglected in the recent industrialization of Korea. Both the total population and that

of most of the cities have grown only slightly in recent years. Despite the low degree of industrialization, Japanese are comparatively numerous in the area; many of them are small businessmen interested in the large local market or landowners attracted by the fertile soil and a climate similar to that of Southern Japan.

B. Pusan (Fusan; 1940 population: 249,734).

(1) Importance.

Pusan, on the southeast coast, is the third largest city and the strategically most important port in Korea (FIGURES VIII - 2 and VI - 24). Its importance lies in its proximity to Japan, its rail connections with the interior, and its excellent harbor facilities. Pusan is 120 miles from Japan, and is more subject to Japanese influence than any other Korean city. The double-track Pusan - Kyongsong (Keijō) - Mukden railroad, part of the all-rail route to South China, terminates in the dock area. The port has extensive facilities, which are now undergoing further improvement, and handles a major portion of the trade with Japan. Pusan is the transshipment point for military supplies and troops to the continent, and rice, cotton, steel, and coal to Japan. Its importance has increased as the longer sea routes between Japan and the continent have become more vulnerable to attack and as the shortage of enemy shipping has grown more acute. Pusan is the capital of Kyongsang-namdo (South Keisho) and the site of well-equipped railroad repair shops, the largest Korean shipyard, and machinery plants.

(2) Means of access.

(a) *Water.* Pusan harbor, which consists of north and south inner and outer harbors and opens onto Chōsen-kaikyō (strait), has a depth of 24 to 40 feet in the anchorage and at the piers. In April 1944, there were 14 to 20 vessels in port each day, and 3 or 4 ships entered and left port daily. There is an 8-hour ferry service, probably with 1 ferry each way daily, between Shimonoseki and Pusan. Ferries also run between Pusan and Hakata, in Kyūshū.

(b) *Rail.* Pusan is the southern terminus of the double-track, standard-gauge Pusan - Kyongsong - Mukden trunk line (FIGURE VIII - 3). An alternative route to Kyongsong passes through Kyongju (Keishū) and Andong (Antō). A secondary line leaves the trunk line at Samnangjin (Sanrōshin), 25 miles northeast of Pusan, and extends southwest to Masan and Chinsju (Shinshū).



FIGURE VIII - 3. Pusan.
Pusan railroad station, with hotel in upper part of building. Looking NE. After 1925.

(c) *Road.* The main highway extends northwest to Kyongsong approximately parallel to the double-track railroad. A secondary east-coast highway extends north to Wonsan (Genzan) by way of Ulsan (Urusan); a short road runs due west to the estuary of the Naktong-gang (Rakuto-ko).

(d) *Air.* An airfield, with a northwest-southeast runway (6,000 feet by 1,400 feet), lies approximately 5 miles north-east of the harbor. It may be only partially constructed. A smaller airfield is reported in the area.

(3) Physical characteristics.

Pusan (PLAN 39), on the irregular southeastern coast of Korea, faces the harbor and Mok-to, a hilly island 4 miles long and 1½ miles wide. A 640-foot drawbridge (FIGURE VIII - 4) from the city to the island divides the northern and southern inner harbors. Hills, which are a continuation of the east coast mountain range, lie immediately behind the city. Many streams flow through the city into the harbor; the largest is the Posu-ch'on (Hosui-sen) (FIGURE VIII - 2).



FIGURE VIII - 4. Pusan.

Drawbridge between Pusan and Mok-tō. Probably looking E. 1935.

The principal section of the city, which includes the commercial center, lies across the channel from Mok-to. It measures approximately 1 mile by ½ mile, with a prong extending up the valley of the Posu-ch'on (Hosui-sen) for 1 mile. The street pattern is roughly rectangular. An open army drill ground is at the northwestern margin of this area. Yongdu-san (Ryūtō-san), a wooded park, is in the commercial district (FIGURE VIII - 5); north of it lies Pokyong-san (Fukuhei-san), another park (FIGURE VIII - 2).

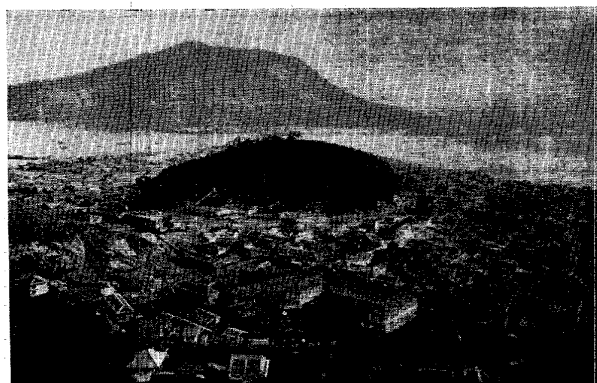


FIGURE VIII - 5. Pusan.

Commercial section of city; Yongdu-san (Ryūtō-san) in center and Mok-tō in background. Looking SE.

An expanding industrial arm of the city extends northeast along the harbor for 3 miles and continues inland along the railroad line. Extensive railroad spurs serve the industrial area, the warehouses, the principal piers, and the ferry wharf to the

south. Important industrial installations, a shipyard, and oil companies are located on the western shore of Mok-to. Urban development covers the western tip of Mok-to.

(4) Factories.

The major industries are:

- Chōsen Electric Steel Manufacturing Company (one of Korea's most important plants for fabricating iron and steel products; manufactures machinery and railway and mining equipment).
- Chōsen Diesel Engine Company (shipbuilding for Japanese navy).
- Chōsen Oil Manufacture Company (bean and cottonseed oil refinery reported to be making explosives).
- Chōsen Powder Company (reported to be making black gunpowder).
- Oil refinery (reported to be one of Korea's major refineries).
- Chōsen Marine Products Company (frozen fish).
- Empire Hemp Corporation (second largest hemp plant in the Japanese empire).
- Japan-Manchurian Aluminum Company (operated by the Chōsen Petroleum Company; manufactures tin cans for oil).
- Takehara Iron Works.
- Sansho Industrial Company (carbide).
- Aircraft assembly plant reported on Mok-to.

There are also 11 electric light bulb factories, 4 rubber companies, and pottery and enamelware factories.

(5) Warehouses and storage.

Pusan has not less than 124 warehouses with an available area of 2,269,150 square feet; the majority are of steel. They are the best storage facilities in Korea. The warehouses are near the piers and quays and are served by railroad spurs. Open storage ground is also available.

The Rising Sun Oil Company, on Mok-tō, has storage tanks for approximately 50,000 gallons. Tankers can dock at Pier No. 2 and take on oil from storage tanks buried a short distance west of Pier No. 1. There are probably other oil storage facilities as well.

(6) Billeting facilities.

(a) *Barracks.* Two barracks areas (139 barracks), with an estimated capacity of 4,490 men, are north of the north inner harbor. There is also a garrison in the northwestern section of Pusan.

(b) *Schools.* There are at least 12 schools.

(c) *Hotels.* The hotel over the railroad station has 20 to 25 rooms (FIGURE VIII - 3); other hotels are the Oike, Moriya, Matsui, and Hanaya.

(7) Health and sanitation facilities.

(a) *Hospitals.* The brick railroad hospital and the frame provincial hospital have 100 beds each, operating rooms, and surgical equipment for major operations. A mission leper colony is in the area.

(b) *Sewage disposal.* A sewage trunk line, 5.6 miles in length, drains 9.2 square miles of Pusan and discharges into the bay. In 1936 this system was estimated to serve about 160,000 people.

(8) Buildings.

Important buildings in Pusan are indicated on FIGURE VIII - 2. The city post office is shown in FIGURE VIII - 6.



FIGURE VIII - 6. Pusan.
Post office.

(9) *Internal transportation.*

The Chōsen United Electric Company's 12.1-kilometer (7.6-mile) streetcar line serves the city and suburbs; it extends over the drawbridge to Mok-to. A ferry also connects Pusan with Mok-to.

(10) *Public utilities.*

(a) *Water.* The Nakdong-gang (Rakutō-kō) and possibly the Suyong-gang (Suiei-kō) are the sources of Pusan's water supply. Water is stored in 2 pure-water reservoirs, 2 railroad reservoirs behind the roundhouse, and 1 reservoir on Pokpyong-san (Fukuhei-san) (mountain). In 1936, 41.7% of the population was served and 2,377,007 gallons of water were supplied daily.

(b) *Power.* The Pusan steam plant, which had a capacity of 12,600 kilowatts in 1933, supplies power to the port facilities and light industries. The Chōsen Weaving and Spinning Company maintains its own steam power plant, which has a 3,120-kilowatt capacity. Power from the Kangnung (Kōryō) hydroelectric project in Kangwon-do (Kōgen Province), reported to be completed in 1943, is probably transmitted to Pusan.

(c) *Ice.* Pusan has an ice plant.

(d) *Gas.* The gas company, which maintains its own steam power plant, has 4 ovens and 2 storage tanks; it supplies 4,265 consumer units.

(e) *Communications.* At least 10 cables, the greatest concentration entering Korea, connect Pusan with Japan proper. The city has telephonic and telegraphic communications with all major Korean cities. JBAK, a 250-watt radio station, is in Pusan.

(f) *Fire-fighting.* There is a well-organized professional fire-fighting squad with some motorized equipment.

(11) *Repair and service facilities.*

(a) *Marine.* The Chōsen Heavy Industry Company, the largest shipyard in Korea, has 2 drydocks. This company is capable of building ships of 3,000 tons and of repairing ships of 8,000 tons. The Pusan Engine Company builds ships and engines. Several boatyards in the port area build and repair small boats.

(b) *Railroad.* The Pusan Railroad workshops, among the

largest in Korea, repair locomotives and rolling stock and build freight cars and, reportedly, railway ferry boats. The workshops are behind the piers in conjunction with the terminal yard.

(c) *Machine shops and foundries.* There are some fairly large and well-equipped machine shops and foundries in Pusan.

(d) *Garages.* General Motors and Ford agents formerly maintained good service stations. There were also several garages, service stations, and a factory which made bus and truck bodies.

C. Chinhae (Chinkai; 1937 civilian population: 18,988).

The new city of Chinhae (PLAN 40), laid out and developed by the Japanese government, is important only as an adjunct to the naval base, which is the largest and most complete in Korea. The base functions primarily as a mine depot and training area, but is also suitable for a destroyer base. Other installations at Chinhae are a torpedo-loading plant and arsenal, a naval air station, a possible submarine base, a radio station, minor repair facilities, oil and coal storage facilities, a power plant, barracks, and officers' quarters (FIGURE VIII - 7).

Chinhae, on the northern shore of Chinhae-man (bay), lies 15 miles from the headlands of Chōsen-kaikyō (strait). Depths in front of the naval station are 5 to 6 fathoms. A single-track railroad extends 10 miles north to Ch'angwon (Shōgen), which is on the south coast rail line from Chinju (Shinshū) to Samnamgjin (Sanrōshin), where connection is made for Pusan (Fusan). A main road leads to Ch'angwon (Shōgen) and connects with the Pusan-Kyongsong (Fusan-Keijō) highway. A landing ground and seaplane station are also in the Chinhae area.

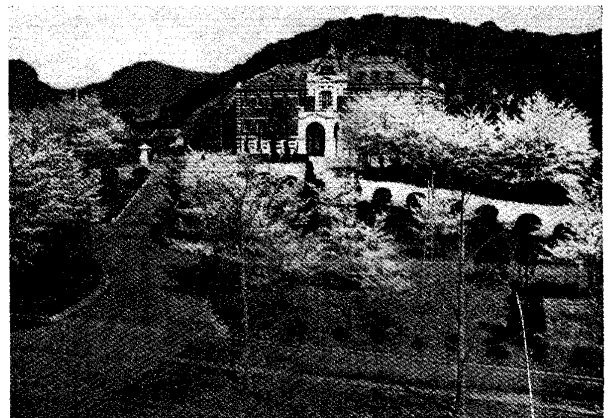


FIGURE VIII - 7. Chinhae.
Headquarters building at naval base. Looking NW.

The city, at the base of a hilly peninsula 1½ miles long, is surrounded by wooded hills except for a small area of rice paddies on the north. The numbered streets, which form a rectangular grid, are cut by 6 thoroughfares radiating from a central circle (FIGURE VIII - 8). The Ch'ongsi-ch'on, a channeled stream, runs from the north through the town into Chaedung-man (bay). Settlement extends along the railroad tracks to the naval base, ½ mile west of the town proper.

Barracks and officers' quarters, associated with the naval base, and several schools provide billering facilities. An isolation hospital lies northeast of the town.

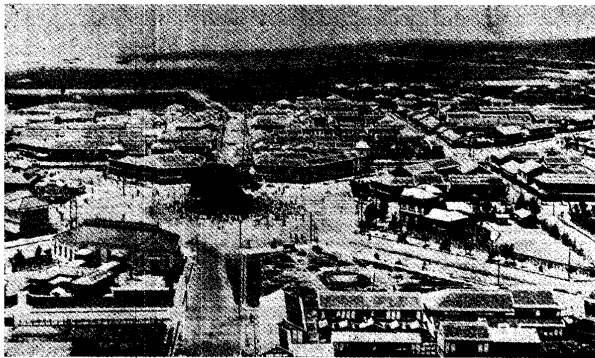


FIGURE VIII - 8. *Chinhae*.
Six streets radiating from Central Circle. Looking S.

Power is supplied by power plants in southern Korea. A transmission line runs to the transformer station just north of the Chinhae Railroad Station. Water for the town and naval base comes from a reservoir in the hills, 15 miles distant.

D. Masan (1940 population: 36,429).

(1) *Importance.*

Masan (PLAN 52), 30 miles west of Pusan (Fusan) on the irregular south coast of Korea, is a newly-developed supplementary port for the increasing traffic between southern Korea and the Japanese mainland. Exports to Japan totalled 430,000 metric tons in 1937. Masan has rail and road connections



FIGURE VIII - 9. *Masan*.
Masan harbor. Looking S.



FIGURE VIII - 10. *Masan*.
View of new part of city. Before 1930.

tions with the main Pusan-Kyongsong (Keijō) transportation routes.

(2) *Means of access.*

(a) *Water.* Masan is at the head of Chinhae-man (Chinkai-wan; bay). There are berthing facilities and anchorage depths of $2\frac{3}{4}$ to 7 fathoms in the nearly enclosed natural harbor. (FIGURE VIII - 9).

(b) *Rail.* Masan is connected by a single-track railroad with the Pusan-Kyongsong main line at Samnangjin (Sanrōshin), 20 miles northeast, and with Chinju (Shinshū), 25 miles west.

(c) *Road.* Highways extend northeast from Masan to the main Pusan-Kyongsong route, west to Chinju, and the coastal area.

(3) *Physical characteristics.*

Masan is an elongated settlement on the western shore of Masan-man (bay), at the head of Chinhae-man. It measures about $2\frac{1}{2}$ miles from northeast to southwest and $\frac{1}{2}$ mile across at its widest point. From the low wooded hills on the western border, several channeled streams flow through the city into the bay. Most of the streets are straight and the grid is fairly regular. The main thoroughfare is an extension of the highway which enters the city from the north between the 2 rail lines. (FIGURE VIII - 10).

(4) *Warehouses and storage.*

Masan has warehouses, built since 1940, and at least 4 powder magazines.

(5) *Billeting facilities.*

Barracks of a heavy artillery regiment and 5 schools provide billeting facilities (FIGURE VIII - 11).

(6) *Health and sanitation facilities.*

Masan has a 75-bed municipal hospital and an isolation hospital.

(7) *Public utilities.*

Water, electric power, ice, and telephone and telegraph connections with the main system are available in Masan.

(8) *Repair and service facilities.*

Masan has a drydock, built in 1940, and 3 patent slips, which handle vessels of 3,000 tons.

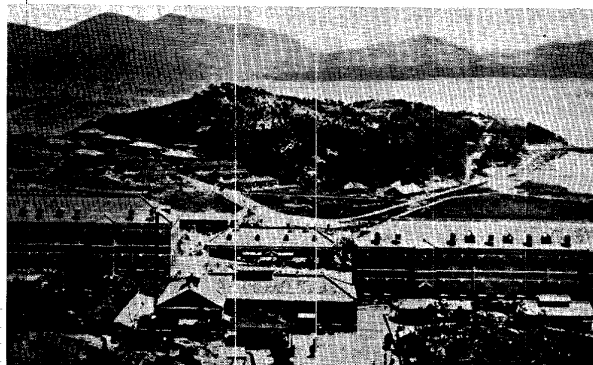
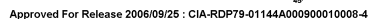


FIGURE VIII - 11. *Masan*.
Army barracks. Looking NE.



E. Yosu (Reisui; 1937 population: 31,259).

(1) Importance.

Yosu (FIGURE VIII - 12) is on the irregular southeast coast of Korea, and serves as an auxiliary and alternate port for Pusan (Fusan), which is approximately 80 miles northeast. The Japanese have developed the deepwater harbor mainly from a military and naval standpoint, as the town has little commercial or industrial importance. Raw materials and military supplies are transported to and from Japan over the 9- to 10-hour sea route between Hakata, in Kyūshū, and Yosu. The port has been much used as a debarkation point for troops.

(2) Means of access.

(a) *Water.* Yosu outer harbor is reached from Chōsen-kaikyō (strait). It is reported large enough to accommodate a fleet of ships.

(b) *Rail.* The single-track Yosu - I-ri (Ri-ri) rail line crosses the south coast line at Sunch'on (Junt'en) and the west coast line at I-ri; it terminates in the port area, where it serves the warehouses and the large ferry pier.

(c) *Road.* A secondary road from Pusan and other southeastern points enters the old section of Yosu on the west and joins the crosstown highway to the new port area.



FIGURE VIII - 13. Yosu.
Old town in foreground. Newly developed port area behind peninsula in right middleground. Looking NE.



FIGURE VIII - 14. Yosu.
Old town of Yosu and inner harbor, part of which has been filled in. Looking W.

(3) Physical characteristics.

The urban unit of Yosu stretches 1½ miles across the base of a small peninsula from the old Korean settlement in the southwest to the newly developed port area in the northeast (FIGURE VIII - 13). Hills confine the city on the north and west; hills to the south are being levelled for further urban development, and the removed material is used to fill in the waterfront around the base of the peninsula.

The more densely settled Korean section is just south of Chonggo-san (hill). The old commercial area faces the inner harbor, most of which has been filled in (FIGURE VIII - 14). The street pattern is irregular; only a few straight roads skirt the waterfront at the base of the hill.

The less densely settled port area extends northward along the shore of the outer harbor for ½ mile. About 2 miles of the shore north of the wharf has been straightened by the reclamation of land. This area is largely Japanese, and is used for governmental purposes and trade. The street pattern is rectangular.

A main thoroughfare crosses the saddle at the base of the peninsula and connects the 2 parts of the urban unit. All roads are macadamized, and the Japanese section has sidewalks.

(4) Warehouses and storage.

Near the railroad and dock area in the new town there is an extensive warehouse area which covers 3 separate streets. The old town has a small oil storage area along the shore of the inner harbor, and there are large godowns near the old custom house (FIGURE VIII - 15).



FIGURE VIII - 15. Yosu.
Looking S from hill confining old settlement along inner harbor. Warehouses in lower right.

(5) Billeting facilities.

Barracks are reported under construction. Other billeting facilities are afforded by schools and several Japanese hotels of moderate size and recent construction.

(6) Health and sanitation facilities.

There are 2 or 3 small private hospitals. Sewage is dumped into open ditches.

(7) Buildings.

The old town contains the city and county offices, an old custom house, a market, and police stations. The railroad station, another custom house, and a rice inspection office are in the new town.

(8) Public utilities.

An ice plant is located in Yosu. The town is connected with the telephone and telegraph systems.

The source of Yosu's water is in the mountainous interior. Power is supplied by a hydroelectric plant of 3,100-kilowatt capacity at Posong (Hōjō).

F. Sunch'on (Junten; 1937 population: 23,462).

Sunch'on, 25 miles northwest of the port of Yosu (Reisui), is an important rail and road junction, the seat of the local administration, and a trading center. The city lies in a fertile north-south valley confined by 2 ranges of hills (FIGURE VIII - 16). The range on the east terminates at 2 railroad stations, which are in a settlement including 60 to 70 homes of railroad employees, a roundhouse, shops, hospitals, and a cinema. The market is on the main street, from which branch side streets. Sunch'on occupies an oblong, compactly settled area.

The north - south Yosu - I-ri (Ri-ri) railroad crosses the east - west Mokp'o (Moppo) - Pusan (Fusan) line at Sunch'on.

The primary south coastal road passes through Sunch'on from west to east; another primary road extends to Yosu. A secondary road connects with Chonju (Zenshū), 65 miles to the north, and a branch extends to Kwangju (Kōshū), 35 miles northwest.

The Alexander Hospital, a 3-story brick building, has a capacity of 130 beds, and the government hospital has about 70.

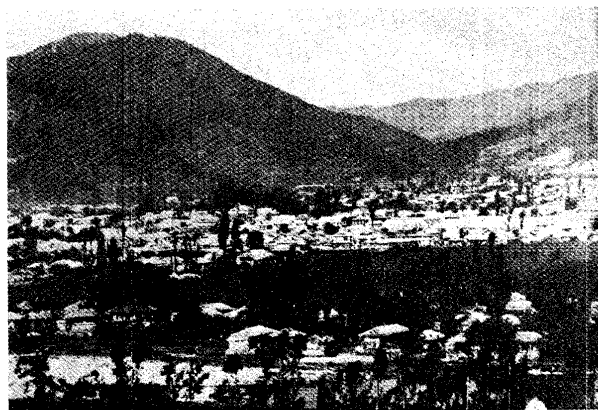


FIGURE VIII - 16. Sunch'on.
View of town confined by hills.

Four municipal schools, residences and schools on the mission compound, and one Japanese hotel can be used for billeting.

Power is supplied by a large hydroelectric plant in the mountains southeast of Chonju (Zenshū). The water supply comes from a river in the hills to the west; settling basins are near Sunch'on. The quality of the water is good and the pressure adequate for normal needs. Ice is also available. Open canals drain the sewage.

Telephone and telegraph connections are maintained with all of Korea.

G. Mokp'o (Moppo; 1940 population: 64,256).**(1) Importance.**

Mokp'o (PLAN 35), a port on the southwest coast of Korea, is the southern terminus of a rail line from Kyongsong (Keijō), and the major commercial center of southwestern Korea. Large quantities of rice are shipped to Japan. It is also a fishing center. The harbor is comparatively small but there is deep-water anchorage in the bay. Naval manoeuvres have been held among the offshore islands.

(2) Means of access.

(a) *Water.* Mokp'o, on the northern shore at the mouth of the Yongsan-gang (river), is approached from the Huang Hai (Yellow Sea) by swift tidal channels flowing between islands and mudflats. The Japanese are believed to have fortified strategic points, especially at the narrows along the channel. Anchorage for 6,000-ton ships is available in the river facing the port. Ships discharge cargo by means of lighters and barges. Pontoon wharves, used to compensate for the wide range in tide in the harbor, accommodate vessels under 2,000 tons. (FIGURE VIII - 17).

(b) *Rail.* Mokp'o is connected with the Pusan - Kyongsong - Mukden Railroad by the Honam Main Line, which extends north to Taejon (Taiden), approximately 120 miles north-northeast.

(c) *Road.* Mokp'o is connected with Kyongsong by a primary highway, and with cities in southern Korea by a network of secondary roads.

(d) *Air.* A landing ground is reported in the area.



FIGURE VIII - 17. Mokp'o.
View of harbor. Looking SE.



FIGURE VIII - 18. *Mokp'o*.
View of Mokp'o city and harbor, taken from hills behind city. Looking NE.



FIGURE VIII - 19. *Mokp'o*.
Industrial section of Mokp'o. Looking SE.

(3) *Physical characteristics.* (FIGURES VIII - 18 and VIII - 19).

Mokp'o, situated on the eastern half of a narrow, twisting peninsula, is confined by hills on the west to a small coastal plain. Settlement curves around a spur which extends from the west into the central section of the city. The older development in Mokp'o, including the Korean homes, is on the northeast and east side of this slope. On the southeast and south, built in part on filled-in land, are the business district and most of the Japanese homes. Along the waterfront of the harbor is an embankment constructed of heavy stone; it is about 25 feet above the mud flats at low tide. The street pattern of the northern and more compact section is irregular, but the grid is rectangular in the less developed business district. A main street surfaced with packed crushed rock skirts the waterfront. A second primary street runs generally north - south and parallels the railroad track. Other streets are unpaved and muddy after rains. Several police stations are so located as to control important streets and intersections by machine-gun fire from the roofs.

(4) *Factories.*

Mokp'o has the following plants:

- Mokp'o Sea Products Company.
- Chōsen Oil Manufacturing Company.
- Japan Celluloid Corporation.
- Branch of Chōsen Cotton Company.
- Japan Raw Cotton Company.
- Mokp'o Cotton Company.
- Nambuk Cotton Company.
- Chōsen Ceramic Company.
- Chōsen Electric Power Company (produces synthetic oil).
- Factory for manufacture of small arms.

(5) *Warehouses and storage.*

Warehouse facilities, chiefly for rice and cotton, lie along the waterfront and near the railroad station. Most of them are 2-story structures, with galvanized iron roofs and, in some cases, sides of the same material.

Oil storage tanks are at the eastern extremity of Mokp'o and across the harbor near the tip of an irregular east - west peninsula, and on the shore at the north end of the anchorage. Timber is stored on Samhak-to (Sankaku-tō), a small island opposite the business district of Mokp'o.

(6) *Billeting facilities.*

About 15 schools provide billeting facilities in Mokp'o.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* The 2-story mission hospital with a capacity of 30 beds was closed by the Japanese in 1940. The municipal Furitsu Mokp'o Hospital has a bed capacity of 75.

(b) *Sewage disposal.* A sewage trunk line, 19 miles long, drains 6 square miles and serves an estimated 55,000 people. The sewage is discharged into the water by an underground system which often does not operate properly because of the low water pressure.

(8) *Public utilities.*

(a) *Water.* Water from a stream 25 miles north of the city is impounded and stored in 4 reservoirs in the area; the most distant is about 15 miles from Mokp'o. The purification plant is on a hill 1 mile north of the main highway leading into the city. The water supply is planned for 40,000. An average daily supply of 498,000 gallons served 41.6% of the population.

(b) *Power.* The Mokp'o Steam Plant, with a capacity of at least 2,250 kilowatts, is southwest of the city between the hills and the waterfront. A concrete building measuring 150 by 80 feet, it is the only plant in the vicinity and produces power for the surrounding area. It can be connected with the large power plant east of Posong (Hōjō).

(c) *Communications.* Mokp'o is connected with the Korean telegraph and telephone system. A ship-to-ship radiotelegraph station broadcasts meteorological information and is known to have had inland connections. Another radio station was reported to have been opened in 1940.

(9) *Repair and service facilities.*

A shipbuilding yard, which constructs small wooden vessels, is in the southwestern section of the waterfront. Other facilities include railroad shops and small machine shops.

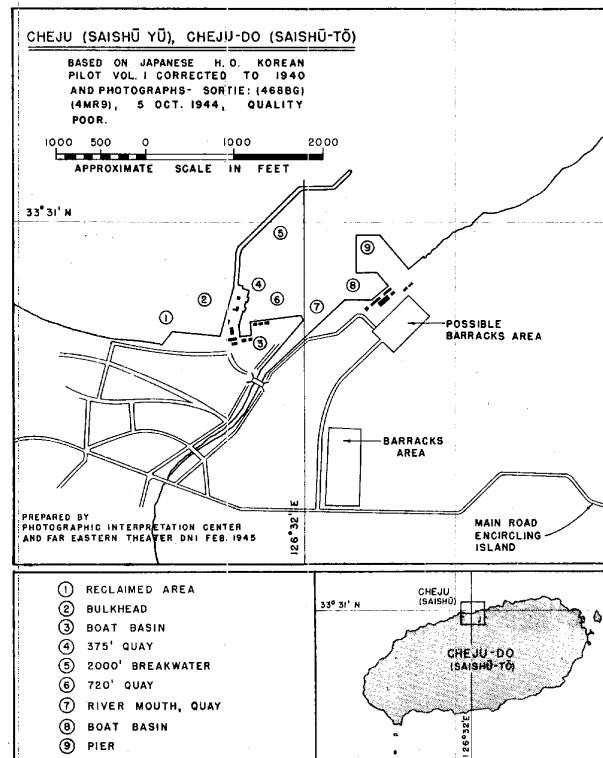


FIGURE VIII - 20. *Cheju.*
Plan of town and port.

H. Cheju (Saishū; 1939 population: 37,500).

Cheju (FIGURE VIII - 20), a small port in the center of the north coast of Cheju-do (Saishū-tō; island), is the largest town and the administrative center of the island. Cheju-do, the only large island south of Korea, is important because of its strategic location on the air and sea routes to Japan from most of the China coast. It has been largely taken over by the military, and new air bases have been developed. The island is a roughly elliptical volcanic mass, rising to 6,588 feet in the center; settlement is concentrated on the low coastal fringe. There are no secure anchorages for large ships, as the coast has few indentations.

Cheju is confined on the west by 2 rivers flowing north into Cheju-haehyop (Saishū-kaikyō) (strait); another river, canalized in part, flows through the eastern section of the town into a small artificial harbor (FIGURE VIII - 21). The compact urban settlement measures about 1 mile from east to west and ½ mile from north to south (FIGURE VIII - 22). Cultivated fields surround the city on 3 sides (FIGURE VIII - 20).

The main street in Cheju is a continuation of the east - west coastal road; the street pattern is irregular. A second road runs south from Cheju. A landing ground with several associated buildings is about 1 mile west of the town.

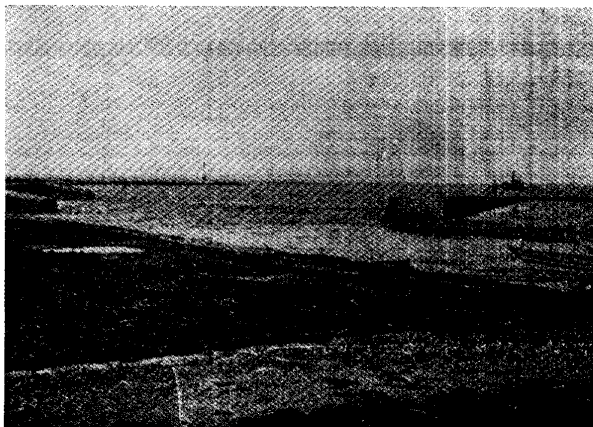


FIGURE VIII - 21. Cheju.
Cheju harbor. Looking NW. Before 1930.



FIGURE VIII - 22. Cheju.
View of Cheju. Probably looking W. Before 1930.

I. Kwangju (Kōshū; 1940 population: 64,520).**(1) Importance.**

Kwangju (FIGURE VIII - 23) is a highway hub and the capital of Cholla-namdo (South Zenra) in southwestern Korea. It is primarily a commercial center, but has silk mills employing 3,600 people.

(2) Means of access.

(a) *Rail.* The Kyongchon western line extends to Sunch'on (Junten), 35 miles southeast (the rail distance is much greater), and to Songjong-ni (Shōtei-ri), 10 miles west, where it connects with the Honam main line. The Kwangju branch line connects the provincial capital with Tamyang (Tanyō), 12 miles to the north.

(b) *Road.* Kwangju is the junction of the primary Mokp'o - Kyongsong (Moppo - Keijo) highway and the secondary east - west road connecting Sunch'on and Popsongp'o (Hosei-ho); the latter is 30 miles northwest. Another secondary road extends northeast to Kumch'on (Kinsen) on the main Pusan-Kyongsong (Fusan-Keijō) highway.

(3) Physical characteristics.

Kwangju, at the head of a valley, is bounded by the main rail line on the north, east, and southeast, and by 300-foot hills on the southwest. A small stream flows between the hills and the city. The main thoroughfare runs northwest - southeast, and is crossed at right angles by another main road near the center of the city.

(4) Buildings.

Most of the houses in Kwangju are constructed of crude lattice work with a covering which has the appearance of stone. The more important buildings are located on FIGURE VIII - 23.

(5) Warehouse and storage.

There are a few small warehouses in Kwangju.

(6) Billeting facilities.

Barracks, about 20 schools, and a few hotels are available for billeting.

(7) Health and sanitation facilities.

Hospitals in Kwangju include the 125-bed brick government hospital, and the 80-bed, 2-story brick Presbyterian hospital. There is good subterranean drainage under the principal streets of the town.

(8) Public utilities.

(a) *Water.* Unusually good drinking water from the nearby mountains is distributed by the municipal waterworks. A dam and reservoir are reported 2 miles east of Kwangju.

(b) *Power.* A large hydroelectric plant is reported to be in the mountains between Kwangju and Chonju.

J. Kunsan (Gunzan; 1940 population: 40,553).**(1) Importance.**

Kunsan (FIGURES VIII - 24 and VIII - 25), on the west coast of Korea about 100 miles south of Kyongsong (Keijō), is one of the leading export centers for rice, barley, and other agricultural products of the southwest; important industries have recently been established in the vicinity. Japanese soldiers are

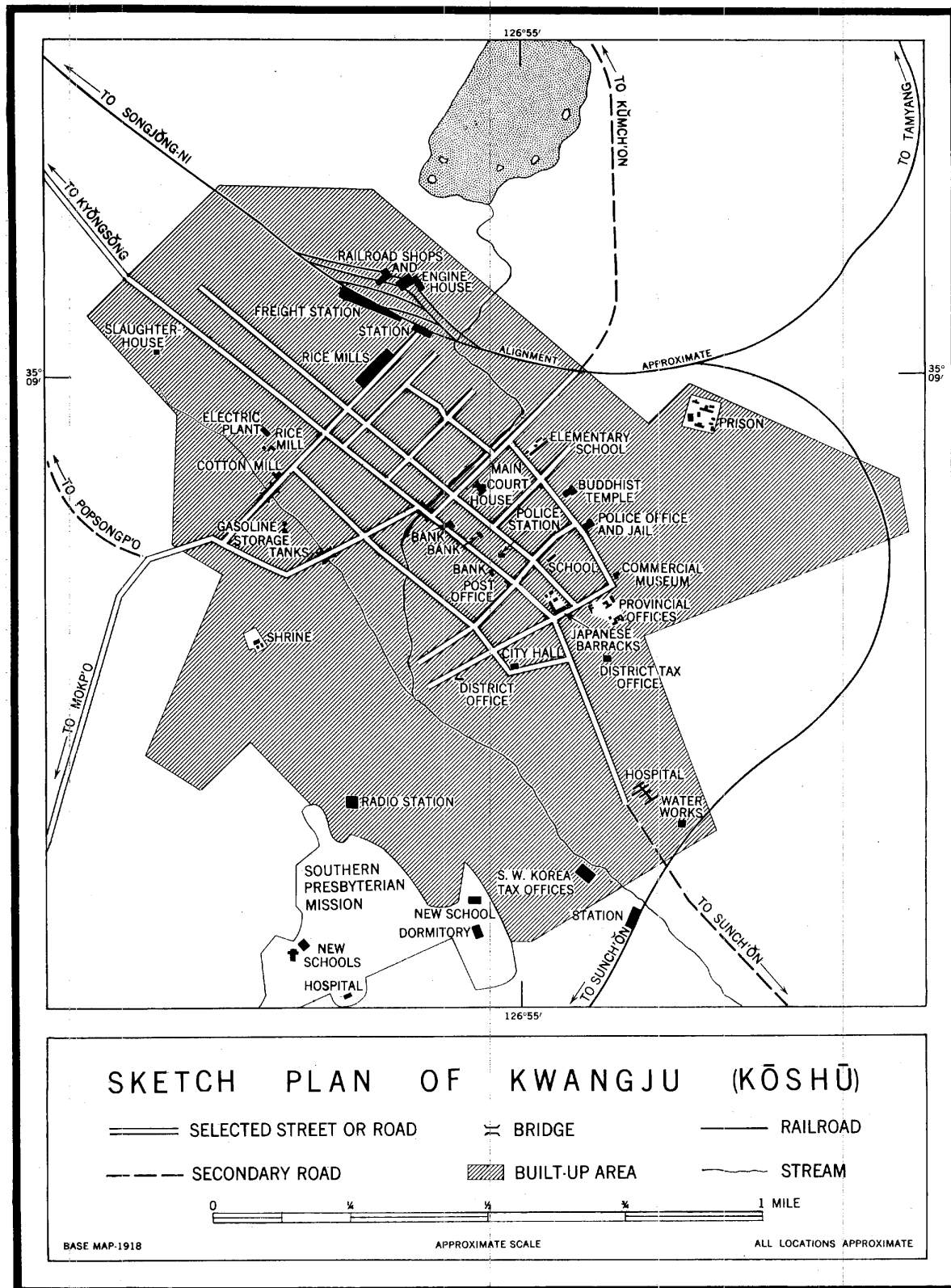


FIGURE VIII - 23. Kwangju.
 Sketch map.

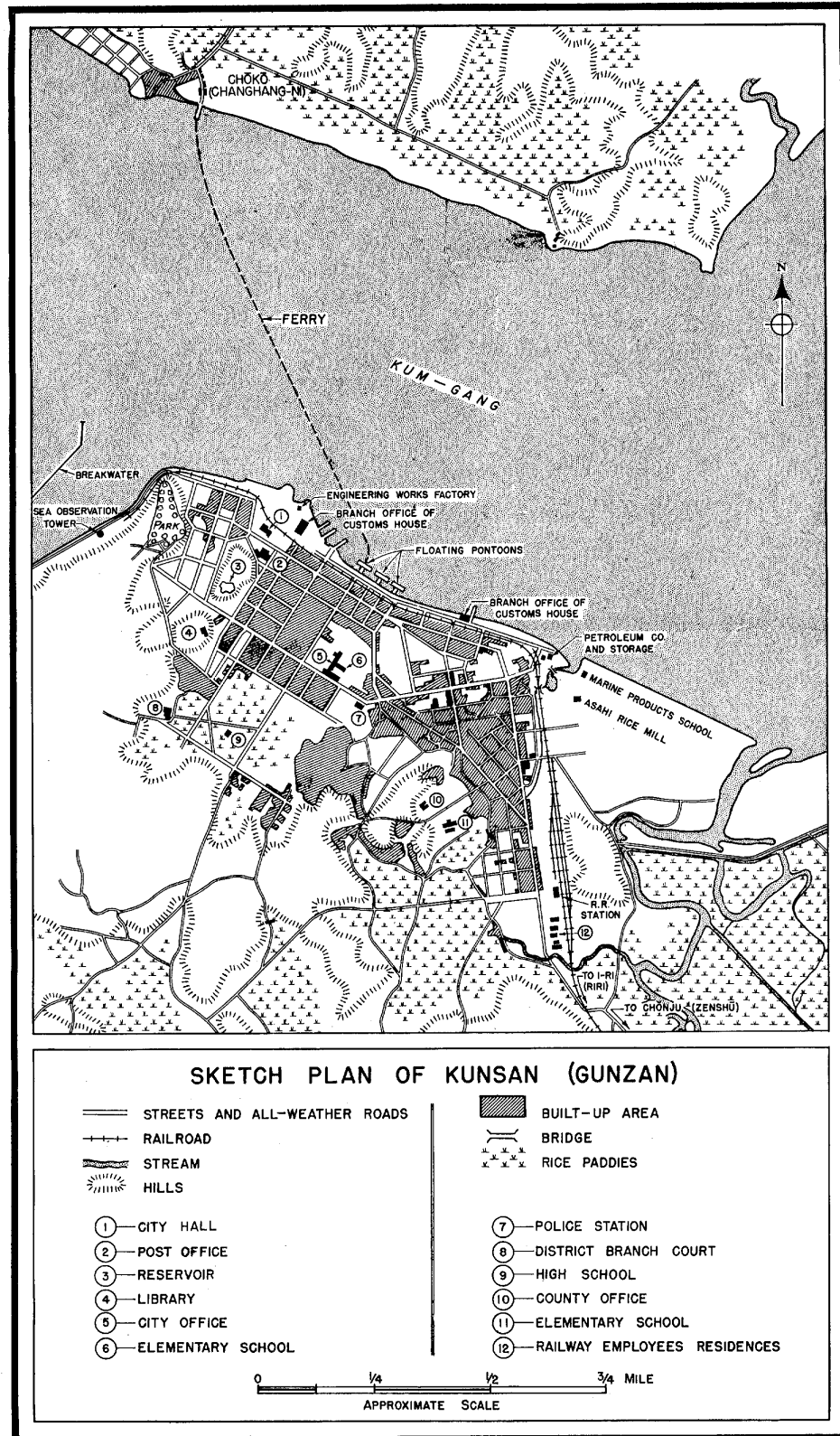


FIGURE VIII - 24. Kunsan.
Sketch map.

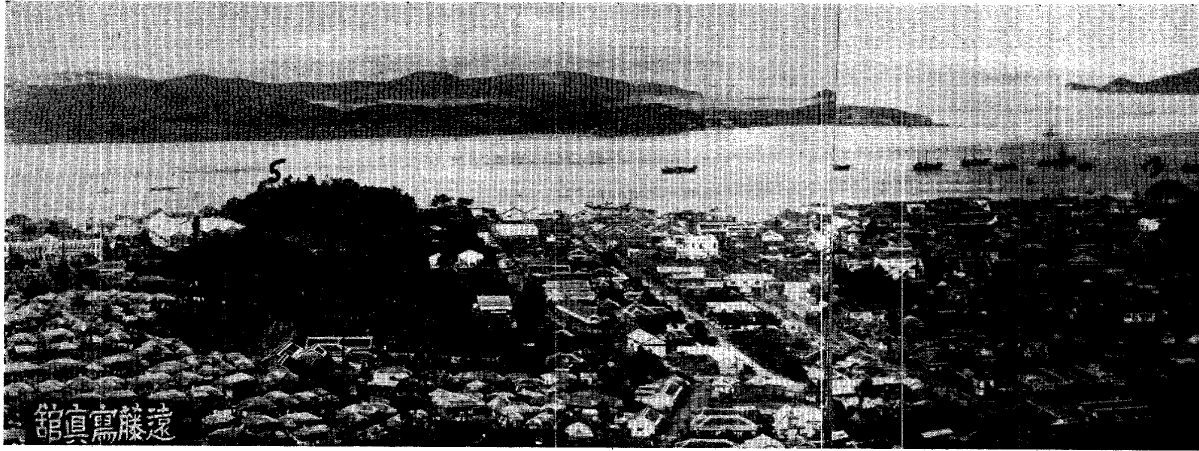


FIGURE VIII - 25. Kunsan.

Panorama of city and harbor. Looking N. Before 1935. 1. Approximate position of sandy beach. 2. Mud flats covered by water at high tide. 3. Bank. 4. Public high school. 5. Municipal park. Former mission school below cross between 1 and 2.

landed at Kunsan because of the city's rail and road connections. Wharves and warehouses have been constructed at the small port of Changhang-ni (Chōkō-ri), across the Kum-gang (river) from Kunsan, which has rail connections with Kyongsong.

(2) *Means of access.*

(a) *Water.* Kunsan-hang (harbor) is approximately 10 miles from the Yellow Sea and is accessible to large steamships. The port accommodates a maximum of 6 or 7 ships of 3,000 to 4,000 tons.

(b) *Rail.* The rail line serving Kunsan crosses the north-south Honam line at I-ri (Ri-ri), approximately 13 miles east. The rail line enters Kunsan on the southeast and bounds the city on the east, extending north to the waterfront. A railroad extends north from Changhang-ni, across the river.

(c) *Road.* A primary highway leads eastward to Chonju (Zenshū), on the Kyongsong-Mokp'o highway. A town across the river is connected with Kyongsong by a first-class highway. Bus lines operate between Kunsan and other cities in southern Korea.

(d) *Air.* A civil landing ground is reported in this area.

(3) *Physical characteristics.*

Kunsan is on the southern shore of the estuary of the Kum-gang (Kin-kō). The city is bordered on the east and southeast by rice paddies, and on the west and southwest by low hills (FIGURE VIII - 25). A meandering stream flows into the river east of the main railroad station. The waterfront has been filled in and extended approximately ½ mile northwest of the existing facilities. The main freight yards and a railroad station of secondary importance are along the waterfront; the main station and minor freight yards are in the southeastern section of the city. The rectangular city, approximately ½ square mile in area, has a long northwest-southeast axis. The street pattern forms a rectangular grid.

(4) *Factories.*

The following factories are in or near Kunsan:

Japan Diesel Company (manufacture and assembly of diesel motor parts).

Chōsen Metal Company (mining machinery and small steel ships).
Chōsen Refining Company across the river from Kunsan (may be an important copper producer).

Nippon Rika Kogyo K.K. (oxygen).

Rice mills.

Match factory.

Large ammunition plant, 1½ miles northeast by east from Kunsan.

(5) *Warehouses and storage.*

Many godowns lie along the waterfront. Six 1-story storehouses, approximately 75 yards long and 20 to 25 yards wide, are behind the floating piers. The warehouse facilities are being expanded by the Japanese.

(6) *Billeting facilities.*

Four schools provide billeting facilities.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* The 2-story brick provincial hospital has a capacity of 85 beds and possesses X-ray equipment (FIGURE VIII - 26); there is also a 50-bed mission hospital.

(b) *Sewage disposal.* Trunk lines 10.6 miles long drain an area of 2.2 square miles. The mixture process of disposal is used.

(8) *Buildings.*

Buildings other than those already mentioned include city and county offices, a custom house, a district court, and a post office.

(9) *Public utilities.*

(a) *Water.* Kunsan's water supply is adequate, but requires purification. The reservoir is in the northwestern section of the city.

(b) *Electricity.* The regular supply of electricity is secured from a hydroelectric plant near Chonju (Zenshū). A large transformer station is south of the city. A steam plant, housed in a small brick building east of the main railroad station, functions as a stand-by plant. Its estimated capacity is 3,650 kilowatts.

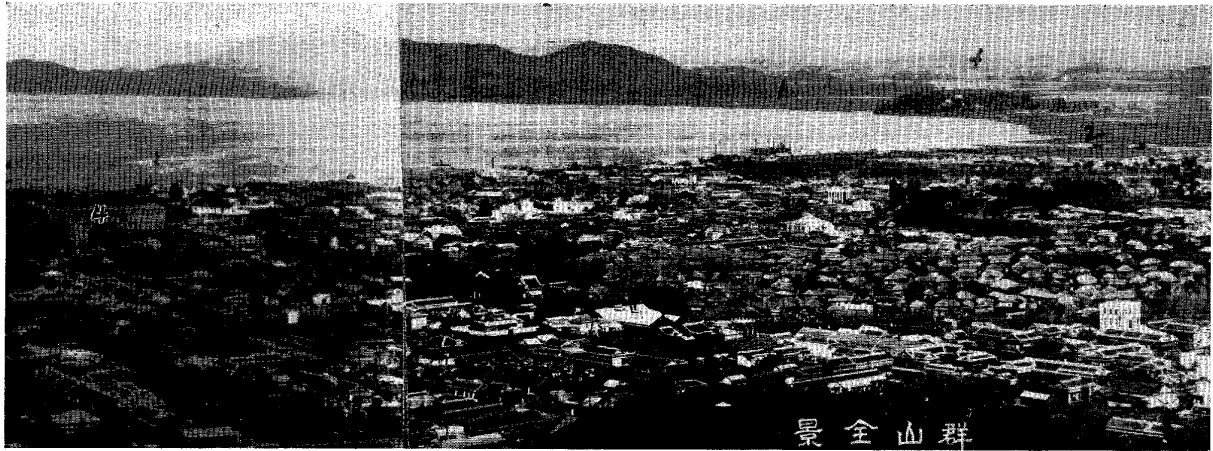
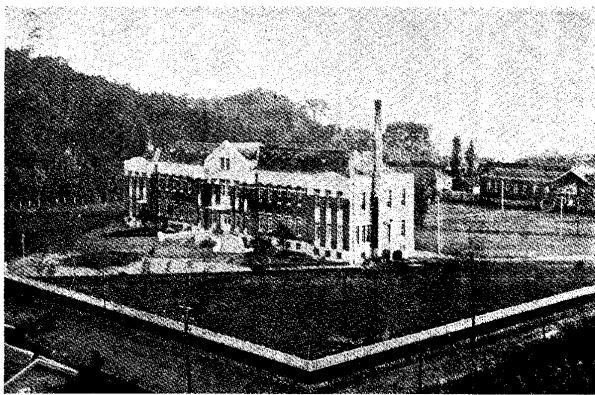


FIGURE VIII - 25. Kunsan.

FIGURE VIII - 26. Kunsan.
Municipal hospital. 1936 or earlier.**K. I-ri (Ri-ri; 1937 population: 21,335).**

I-ri (FIGURE VIII - 27), 13½ miles east of Kunsan (Gunzan), is important only as a railroad center. The strategic west coast rail line from Mokp'o (Moppo) to Kyongsong (Keijō) is met at I-ri by branches to Kunsan and to Yosŭ (Reisui), about 100 miles southeast. A secondary road leads to the primary Kunsan - Chonju (Zenshū) highway, which passes about 1 mile south of the city. There is an emergency landing ground in the area.

The new section of I-ri is built around the main railroad station and has extensive railroad sidings, stores, and service establishments. Two schools and a clubhouse are billeting possibilities. The branch office of the military police, a post office, a rice mill, and residences are also in this section. I-ri has 2 hospitals.

The older part of the town is to the south, near the old I-ri station.

A long-wave radio station, JBFK, operated on 500 watts from I-ri.

Power is supplied to I-ri, which has its own transformer station, by a hydroelectric plant south of Chonju.

L. Chonju (Zenshū; 1940 population: 47,230).

The interior trading center of Chonju (FIGURE VIII - 28) is the capital of Cholla-pukto (North Zenra) and the junction of 2 important highways, the north - south Mokp'o - Kyongsong (Moppo - Keijō) highway and the east - west Sunch'on - Kunsan (Junten - Gunzan) road. Secondary roads serve surrounding communities. A single-track railroad connects with I-ri (Ri-ri), about 15 miles to the northeast, and with Yosŭ (Reisui) on the south coast. An emergency landing field is about 2 miles to the northwest across the tracks from the Tokushin railroad station on the Chonju - I-ri line.

The city lies on a riverine plain partially surrounded by low hills; the river runs through the southern part of the city (FIGURE VIII - 29). The area of Chonju is approximately 2¼ square miles, and settlement is compact (FIGURE VIII - 30). No streets are paved, and there are few modern buildings. The street pattern is rectangular and the main thoroughfare runs northwest - southeast.

The only significant industries are the Kanegafuchi Spinning Company, which produces hemp textiles and explosives, and a large tobacco factory with several warehouses.

About 300 to 500 Japanese troops were reported garrisoned in barracks in the center of the city. Six schools in the mission compound in the southern part of the city and 5 municipal schools can be used for billeting. The 125-bed provincial hospital has operating rooms and X-ray equipment. The Presbyterian South Hospital, with a capacity of 40 beds, was closed by the Japanese in 1940. There are several native institutions. Most streets have underground sewers.

The major buildings in Chonju are the court house, city hall, post office, police station, tax office, provincial hall and the county office. There are several warehouses, including petroleum storage facilities.

The source of Chonju's water supply is a natural water reservoir, supplemented by 2 auxiliary pure water reservoirs. The supply is expected to serve 20,000 persons. Power is generated by a large hydroelectric plant to the southeast; a former auxiliary steam power plant is no longer used.

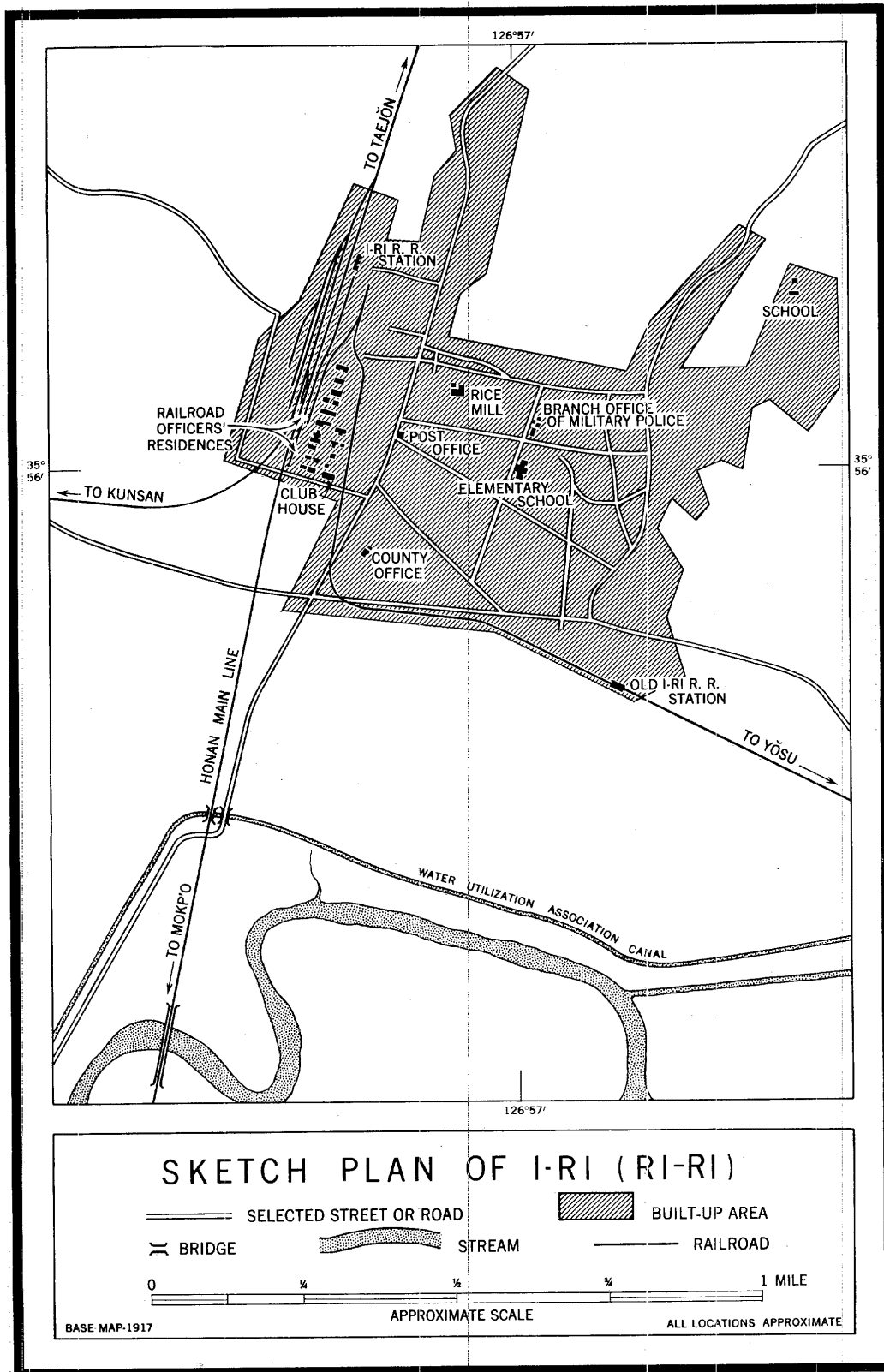


FIGURE VIII - 27. I-ri.
Sketch map.

Confidential

CITIES AND TOWNS

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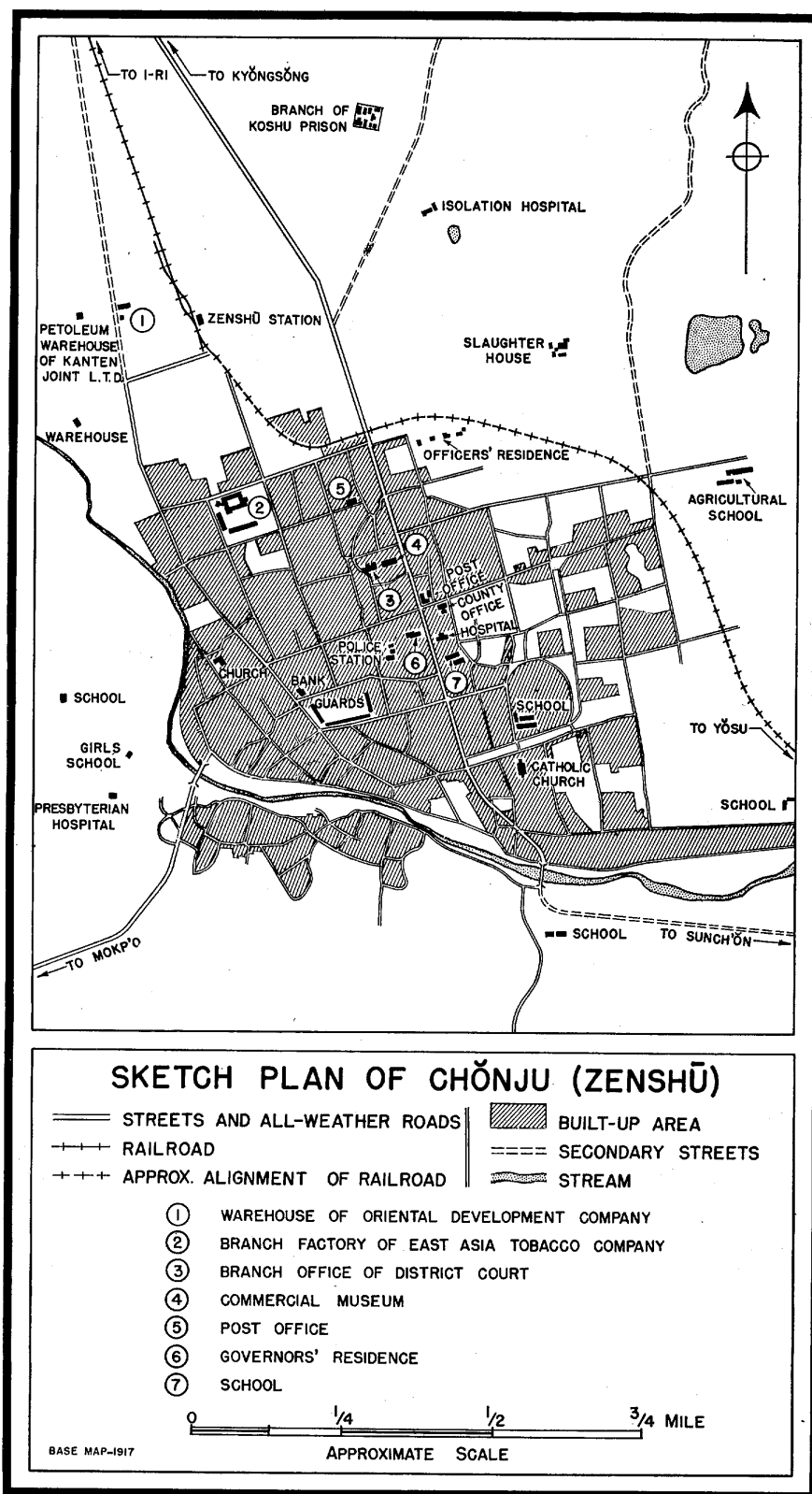
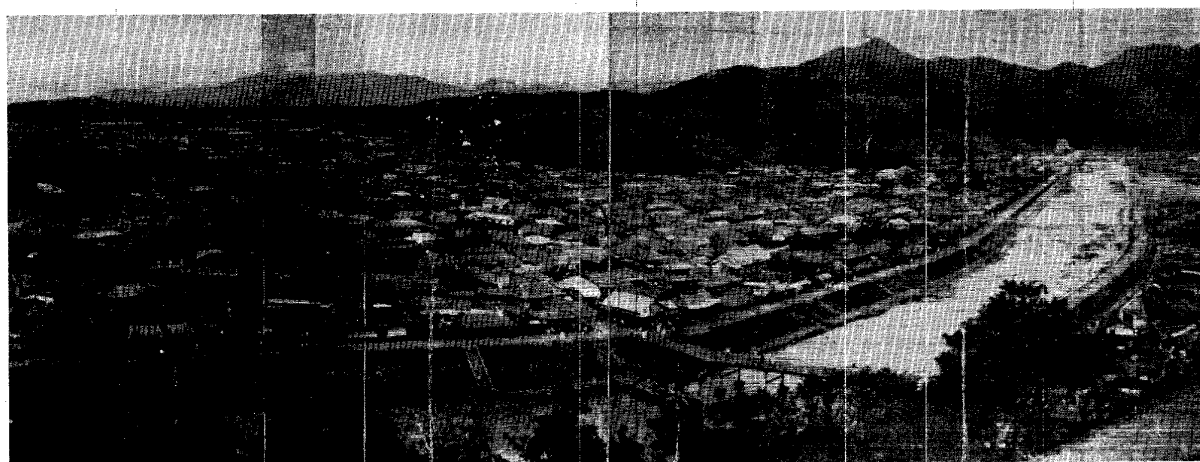
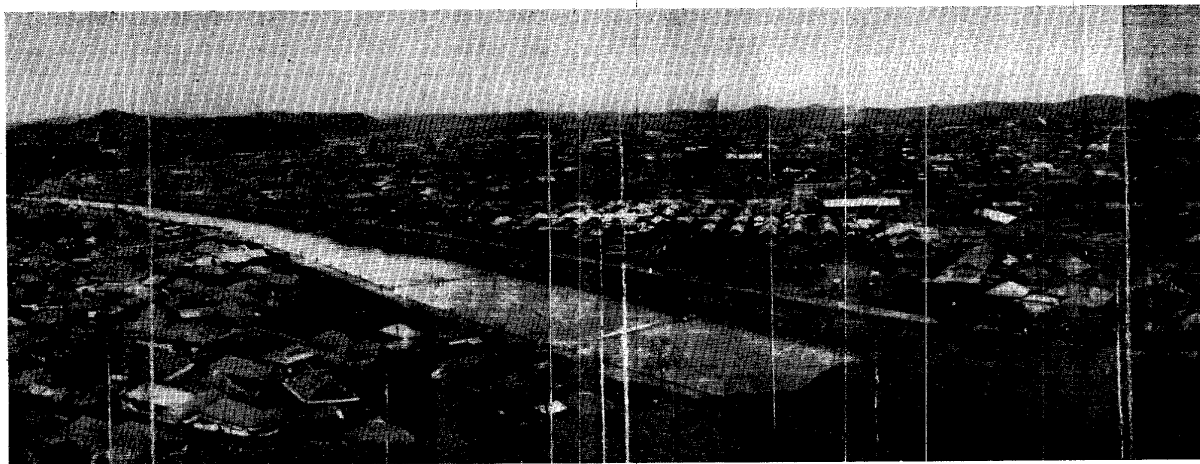


FIGURE VIII - 28. *Chonju*.
Sketch map.

FIGURE VIII - 29. *Chonju*.

Panorama of city taken from a hill on the south bank of the river. Looking E. About 1936.

FIGURE VIII - 30. *Chonju*.

View of city from banks of river. Looking N. 1. Administrative office.
2. South gate.

M. P'ohang-dong (Hokō-dō; 1937 population: 15,250).

P'ohang-dong (Hokō-dō) (FIGURE VIII - 31) is a fishing center and the only port of any importance on the east coast between Wonsan (Genzan), 250 miles northwest, and Pusan

(Fusan), 70 miles south. In 1932, 542,875 tons of shipping were handled.

The Kyongdong rail line leads to Taegu (Taikyū), 35 miles west, and connects with the alternate Pusan - Kyongsong (Keijō) railroad. Roads extend north to Wonsan, west to Taegu, and south to Pusan.

The town lies $\frac{3}{4}$ mile from the mouth of the Hyongsan-gang (Keizan-kō). The mouth of the river is at the north-western end of the head of Yongil-man (Geijitsu-wan; bay). An area about 1,750 yards long and 60 yards wide has been dredged to a depth of approximately 5 fathoms (30 feet) between the town and a narrow offshore island (FIGURE VIII - 32). Mountains border the settlement on the west and a small river bounds the town on the south. The most densely settled area is just north of this river, and factories extend north along the shore. The street pattern is irregular.

A brewery, rice mill, slaughter house, and several fish companies comprise the industrial installations of P'ohang-dong.

There are several schools and 1 quarantine hospital in P'ohang-dong.

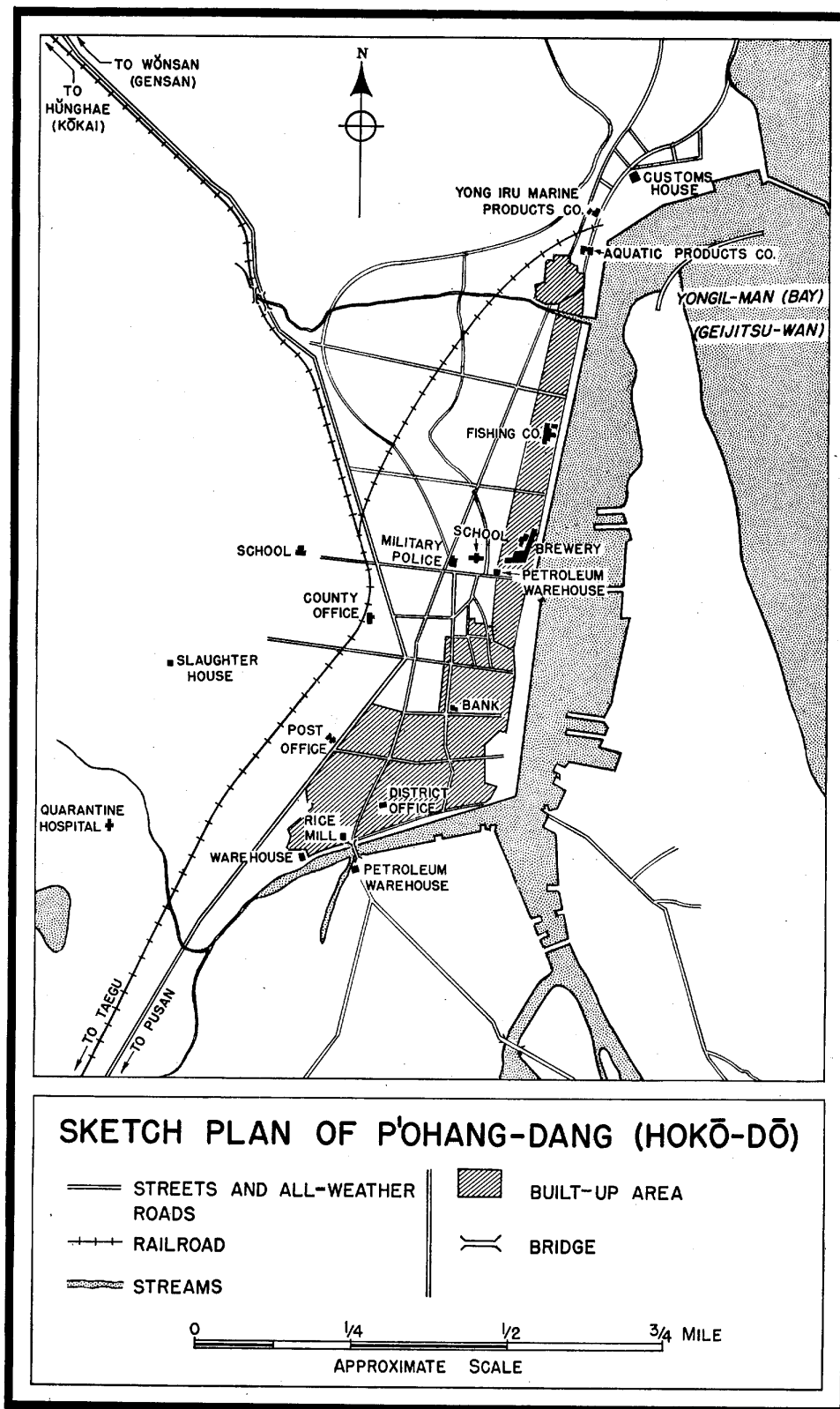


FIGURE VIII - 31. P'ohang-dong.
Sketch map.

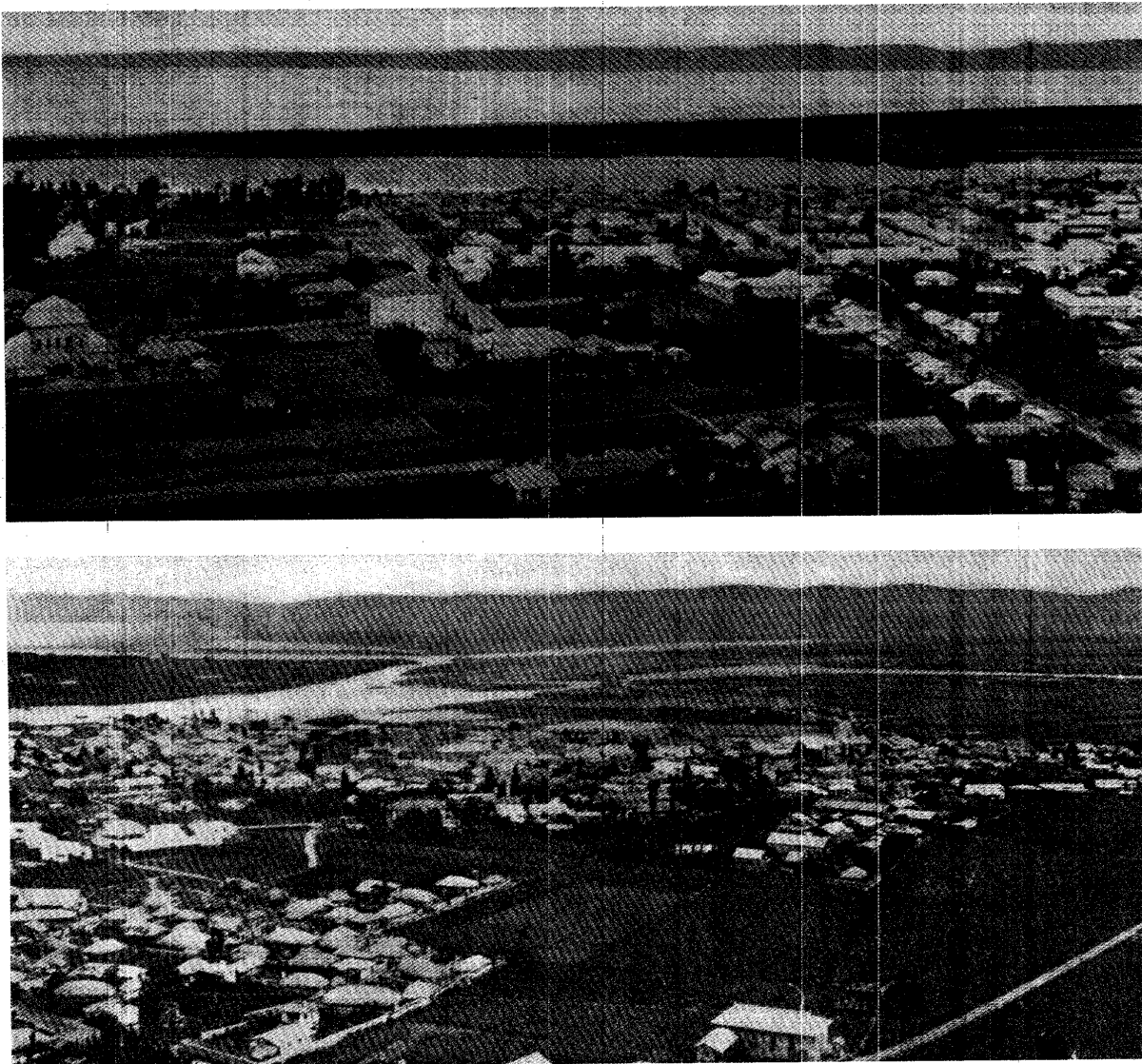


FIGURE VIII - 32. *P'ohang-dong*.
View of town. Probably looking ENE. Before 1930.

N. Taegu (Taikyū; 1940 population: 178,923).

(1) *Importance.*

Taegu (FIGURE VIII - 33) lies on a fertile plain 200 miles south of Kyongsong (Keijō) and 65 miles northwest of Pusan. It is the most important city between Pusan and Kyongsong, the center of Korean silk manufacturing, and a major commercial center. Taegu is the provincial capital of Kyongsang-pukto (North Keisho) and the gendarmerie headquarters for 6 southern provinces; a permanent army garrison is stationed at the city.

(2) *Means of access.*

(a) *Water.* Small tugs navigate the Nakdong-gang (river) from the Sea of Japan to within a few miles west of the city.

(b) *Rail.* Taegu is on the double-track Pusan - Kyongsong main line and is connected by the Taegu branch line with the alternate Pusan - Kyongsong line (FIGURE VIII - 33).

(c) *Road.* A network of roads radiates from Taegu. Two primary roads extend northwest, one to Ch'ungju (Chūshū) and one to Kyongsong by way of Taejon (Taiden); the latter also extends south to Pusan. Secondary roads extend 35 miles east to P'ohang-dong (Hokō-dō) and to Masan, 50 miles south.

(c) *Air.* Four miles east-northeast of Taegu is a 2-runway airfield used by both the army and the Fukuoka - Dairen commercial line. An emergency landing ground is 1 mile south-southeast of the city.

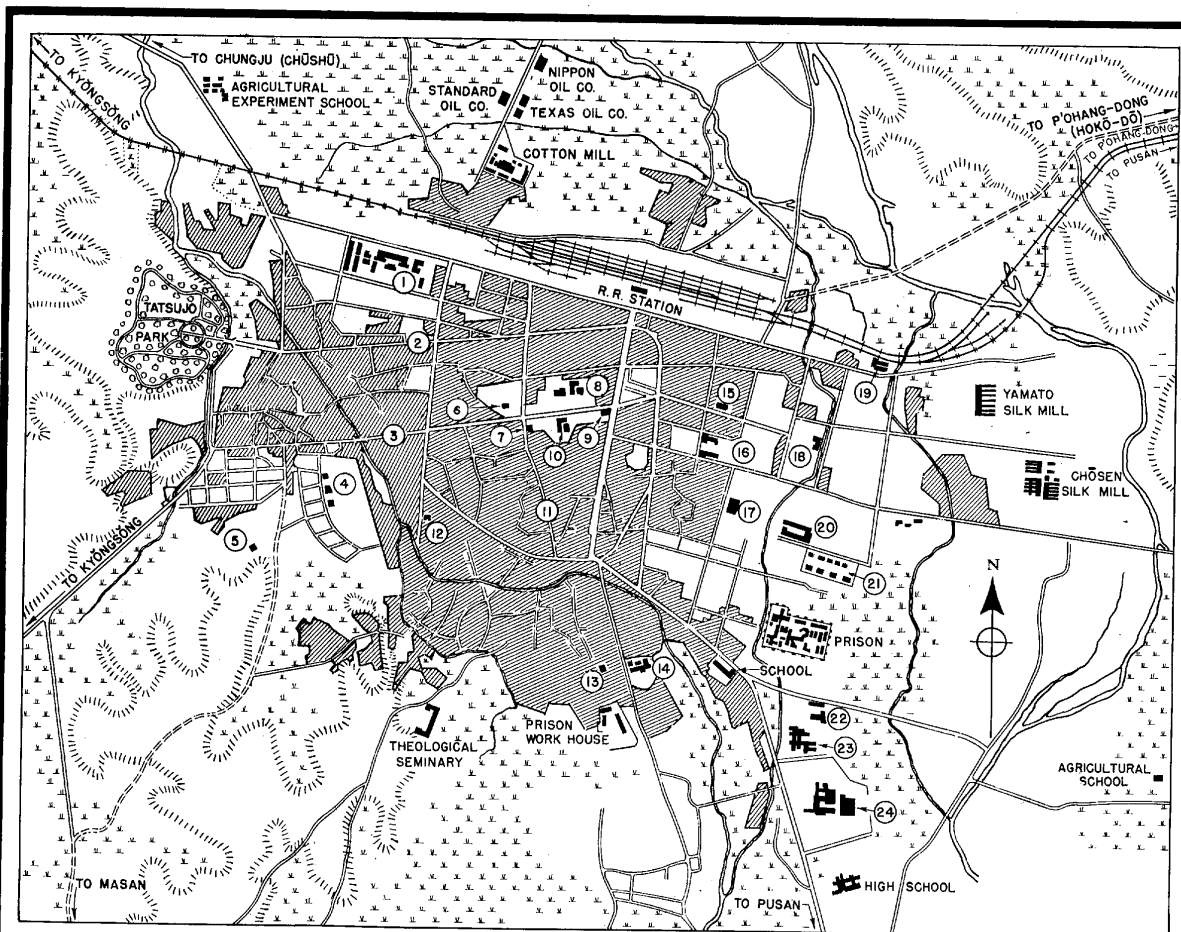
(3) *Physical characteristics*

Taegu lies on a large east - west plain which is confined by hills 3 miles to the north and 2 miles to the south. The city occupies a roughly rectangular area about 1 mile square south of the main railroad. It is a compact community except for Talsong-kangwon (Tatsujō-kōen; park), on an elevation to the west of the city proper, and a ridge which extends south from this park. The over-all street pattern is highly irregular,

Confidential

CITIES AND TOWNS

Page VIII - 21



SKETCH PLAN OF TAEJU (TAIKYŪ)

- | | | |
|-------------------------------------|---------------|--------------|
| ===== STREETS AND ALL-WEATHER ROADS | ++++ RAILROAD | RICE PADDIES |
| ===== SECONDARY ROAD | ~~~~~ STREAM | HILLS |
| ■ BUILT-UP AREA | BRIDGE | |
-
- | | | |
|-------------------------------|-------------------------|-------------------------------|
| ① MONOPOLY BUREAU (BRANCH) | ⑨ EXHIBITION HALL | ⑰ DISTRICT COURT |
| ② MOTOMACHI-TORI (BLVD.) | ⑩ MILITARY POLICE HQ'S. | ⑱ CITY OFFICE |
| ③ HONMACHI-TORI (BLVD.) | ⑪ KYOMACHI-TORI (BLVD.) | ⑲ MONOPOLY BUREAU |
| ④ MARKET | ⑫ SCHOOL | ⑳ GIRLS' HIGH SCHOOL |
| ⑤ MISSION HOSPITAL | ⑬ OBSERVATORY | ㉑ EMPLOYEES' RESIDENCES |
| ⑥ POLICE HEADQUARTERS | ⑭ SCHOOL | ㉒ NORMAL SCHOOL |
| ⑦ POST OFFICE | ⑮ TAIKYŪ HOSPITAL | ㉓ COMMERCIAL SCHOOL |
| ⑧ PROVINCIAL GOVERNMENT HQ'S. | ⑯ SCHOOLS | ㉔ KATAKURA SILK & COTTON MILL |

0 1/4 1/2 3/4 1 MILE
APPROXIMATE SCALE

FIGURE VIII - 33. Taegu.
Sketch map.



FIGURE VIII - 34. *Taegu.*
Honjo-machi, a main thoroughfare in the center of the city. Looking W.
Before 1930.



FIGURE VIII - 35. *Taegu.*
Taegu station. Looking N.

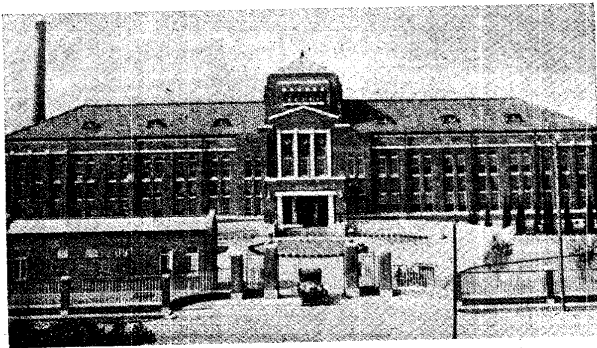


FIGURE VIII - 36. *Taegu.*
Taikyū provincial hospital. 1929 or earlier.

but several straight thoroughfares run generally east - west and north - south (FIGURE VIII - 34). The commercial section of the city occupies those blocks closest to the railroad station (FIGURE VIII - 35). Most of the industrial installations are on the northern and eastern outskirts. Residences and most of the mission buildings are on the ridge south of Talsong-kangwon (Tatsujō-kōen; park).

(4) *Factories.*

Silk and cotton mills are the principal factories in Taegu, except for a large cigarette factory owned by the Japanese government monopoly. The cigarette factory, a short distance west of the station, occupies the most modern reinforced concrete building in Taegu.

(5) *Warehouses and storage.*

There are 2 blocks of warehouses near the railroad station.

(6) *Billeting facilities.*

Extensive military barracks in the southern district accommodate a permanent garrison consisting of infantry, cavalry, and field artillery units. The missionary schools on the ridge can accommodate about 800, and 11 municipal schools afford further billeting facilities.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* One of the 4 government hospitals in Korea is located in Taegu. This 100-bed hospital possesses modern equipment and is reported to handle all types of medical and surgical cases (FIGURE VIII - 36). The Presbyterian East Mountain Hospital, with a bed capacity of 75, has been closed by the Japanese. It is a 3-story modern fireproof building and is well equipped. There is also a private hospital with a bed capacity of 30. The Presbyterians maintained a leper colony near the city with 700 inmates.

(b) *Sewage disposal.* In 1941 sewage was deposited in open ditches.

(8) *Buildings.*

The majority of buildings in Taegu are 1- or 2-story structures. The more important buildings include:

- Exhibition hall.
- Monopoly Bureau.
- District court.
- City office.
- Chōsen bank.
- Observatory.
- Prison.
- Headquarters of provincial government.

(9) *Internal transportation.*

A few busses serving the city were converted to charcoal in 1941.

(10) *Public utilities.*

(a) *Water.* There are 2 sources of water for Taegu. The original system brings water from the hills to a reservoir near the army barracks south of Taegu. The second line enters from the north to a reservoir close to the railroad station. The average daily supply was 4,451 cubic meters (1,169,064 gallons).

(b) *Power.* The Kangnung (Kōryō) development in Kangwon-do (Kōgen Province) is reported to supply power to Taegu. Transmission lines come in from a number of relatively new hydroelectric plants in the surrounding hills and from the Yongwol (Neietsu) steam plant in Kangwon-do.

(c) *Gas.* There is a gas plant in Taegu with 2 ovens (capacity: 2,860 cubic yards) and one tank (capacity: 1,430 cubic yards), which supplies 1,266 consumer units.

(d) *Communications.* Taegu has the usual Japanese telephone and telegraph facilities and a radio station with call letters JBGK.

(e) *Fire-fighting.* The fire department is only partly modernized.

(11) *Repair and service facilities.*

Taegu has a number of small machine shops and foundries.

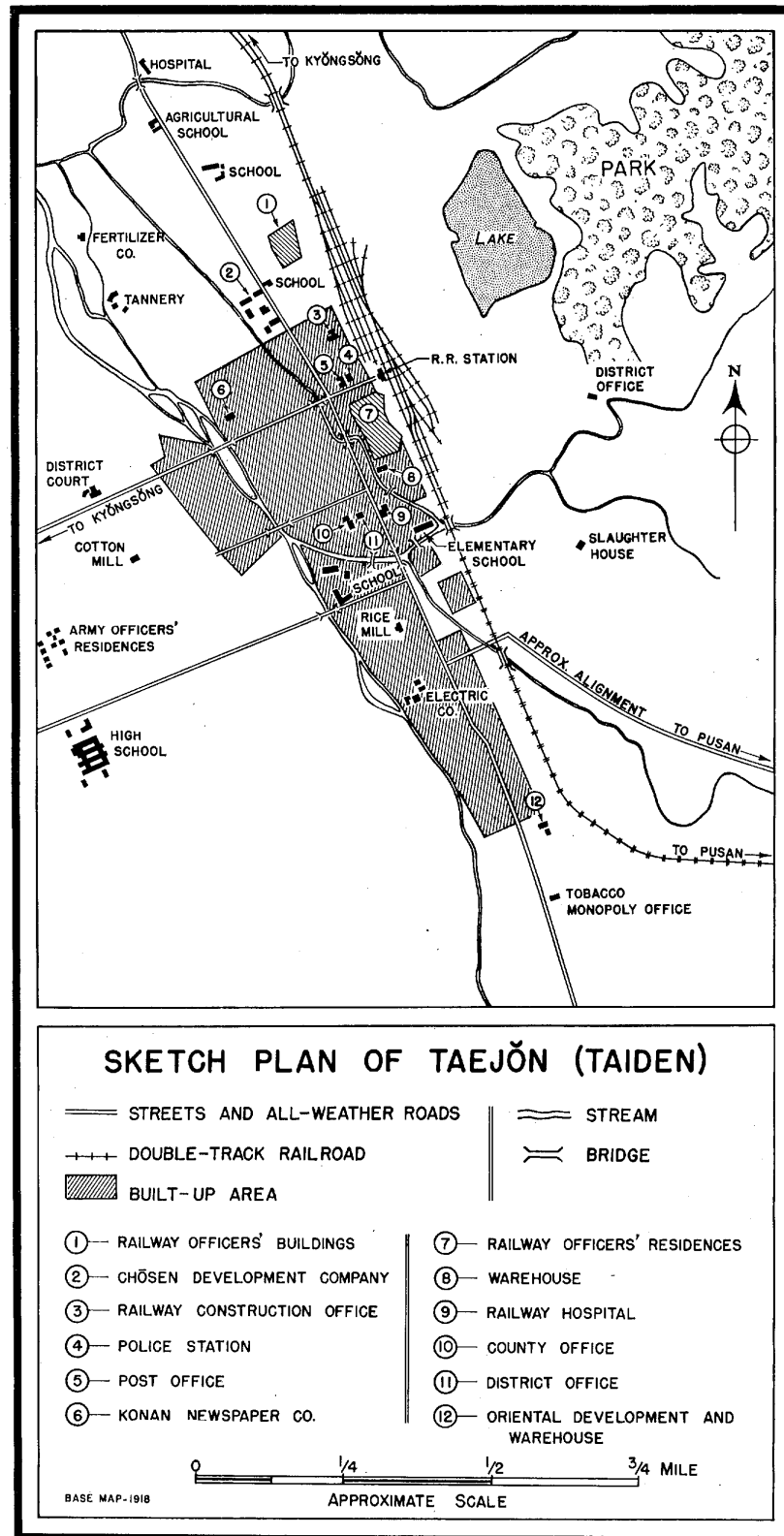


FIGURE VIII - 37. Taejon.
 Sketch map.

The most up-to-date garages are those maintained by the Ford and Chevrolet agencies.

O. Taejon (Taiden; 1940 population: 45,541).

Taejon, 100 miles south of Kyongsong (Keijō), is an important railroad junction and a commercial center as well as the capital of Ch'ungch'ong-namdo (South Chusei). Deposits of fluorspar and tungsten are near by. Japanese make up 20% of the population. The double-track Pusan - Kyongsong - Mukden main line extends to Pusan, 130 miles southwest, and north-west to Kyongsong, An-tung, and Mukden (FIGURE VIII - 120). The Honam main line leaves the double-track line 1 mile north of the city and extends west to Kanggyong (Kōkei), then south to Mokp'o (Moppo). Taejon is on the military highway connecting Pusan and Kyongsong. An airfield and possible underground hangars are thought to be about 5 miles northwest of Taejon.

Taejon lies on a rice-covered plain which is cut by many small streams and drainage ditches (FIGURES VIII - 37 and VIII - 38). It is a long, narrow city; most of its built-up area lies between the railroad and the principal stream. Extensive rail yards lie along the northeastern margin of the city. The commercial shops line those streets over which the principal highways pass. Industrial plants include:

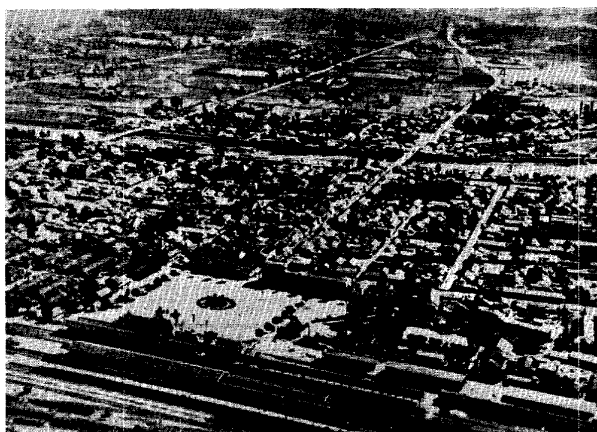


FIGURE VIII - 38. Taejon.

Airview of city. Looking W. 1. Railroad station. 2. Railway officers' residences. 3. Stream. 4. Road to Kyongsong. 5. Army officers' residences.

Chōsen Metals Company (piston rings).

Kanegafuchi Company (hemp textiles), possibly a former cotton mill.

A tannery (Taejon Leather Company), on the northeastern edge of the city.

A rice mill.

There are warehouses and miscellaneous storage along some of the railway sidings and spurs, and at the infantry barracks 1½ miles west of Taejon; other warehouses are probably associated with each of the industries, the office of the Tobacco Monopoly, and the Chōsen Development Company.

In 1941, one infantry brigade was housed in barracks along the Honam rail line, 1½ miles west of Taejon. A smaller barracks area and a cluster of officers' quarters are ½ mile west of the city. A large high school, an agricultural school, and

the elementary schools can probably be used as billets (FIGURE VIII - 37).

There are 3 hospitals: a 100-bed provincial hospital housed in a modern brick building; a railway hospital; and an unclassified hospital, the last-mentioned possibly only a mission dispensary. A sewerage system drains an area of 1 square mile and serves slightly more than half the population.

The water system began service in 1933 and serves 842 homes; a reservoir is reported southeast of the city. Power is supplied by transmission lines from the steam plant at Yongwol (Neietsu), 80 miles northeast; an electric plant is reported southeast of the city and an older plant is near the river in the southern part of the city. Telephone and telegraph service is available. There are railroad repair shops, probably complete with machine shops and foundries, associated with the rail yards along the northeastern margin of the city.

P. Ch'ongju (Seishū; 1937 population: 30,143).

(1) Importance.

Ch'ongju, the capital of Ch'ungch'ong-pukto (North Chūsei) and 75 miles south of Kyongsong (Keijō), is the commercial center for an agricultural area (FIGURE VIII - 129).

(2) Means of access.

(a) *Water.* Flat-bottomed native sampans use the small Musim-ch'on (Mushin-sen or Moshin River) for local traffic.

(b) *Rail.* A branch line extends to Ch'ungju (Chūshū), 35 miles northeast, and to Choch'iwon (Chōchiin), about 10 miles west, where it connects with the Pusan - Kyongsong - Mukden main line (FIGURE VII - 54).

(c) *Road.* A 2-lane, stone-base, earthen road connects the town with Choch'iwon and with Ch'ungju. A narrow earthen road leads to Pugang-ni (Fukō-ri), 10 miles southwest, and there are several trails into the hills east of the town.

(3) Physical characteristics.

The town is on the right bank of the Musim-ch'on, a small north-flowing tributary of the upper Kum-gang (Kin-kō). It is a compact community, formerly a walled town, with a marketplace in its west-central portion (FIGURES VIII - 39 and VIII - 40). The streets are unpaved but in good condition; most of them are wide enough for auto traffic. The commercial section is along the north - south highway, which is the principal traffic artery, and along the road leading from this artery to the marketplace. The provincial government buildings occupy the site of a former Korean military camp near the center of the town. A warehouse of the Oriental Development Company is just north of the prison east of the town (FIGURE VIII - 39).

(4) Billeting facilities.

Potential billets include an agricultural school west of the river, 2 high schools, 3 elementary schools, and several inns.

(5) Health and sanitation facilities.

A municipal hospital near the provincial capital has 20 beds. The Presbyterian mission hospital, a 2-story brick building with about 40 beds, is ½ mile southeast of the town.

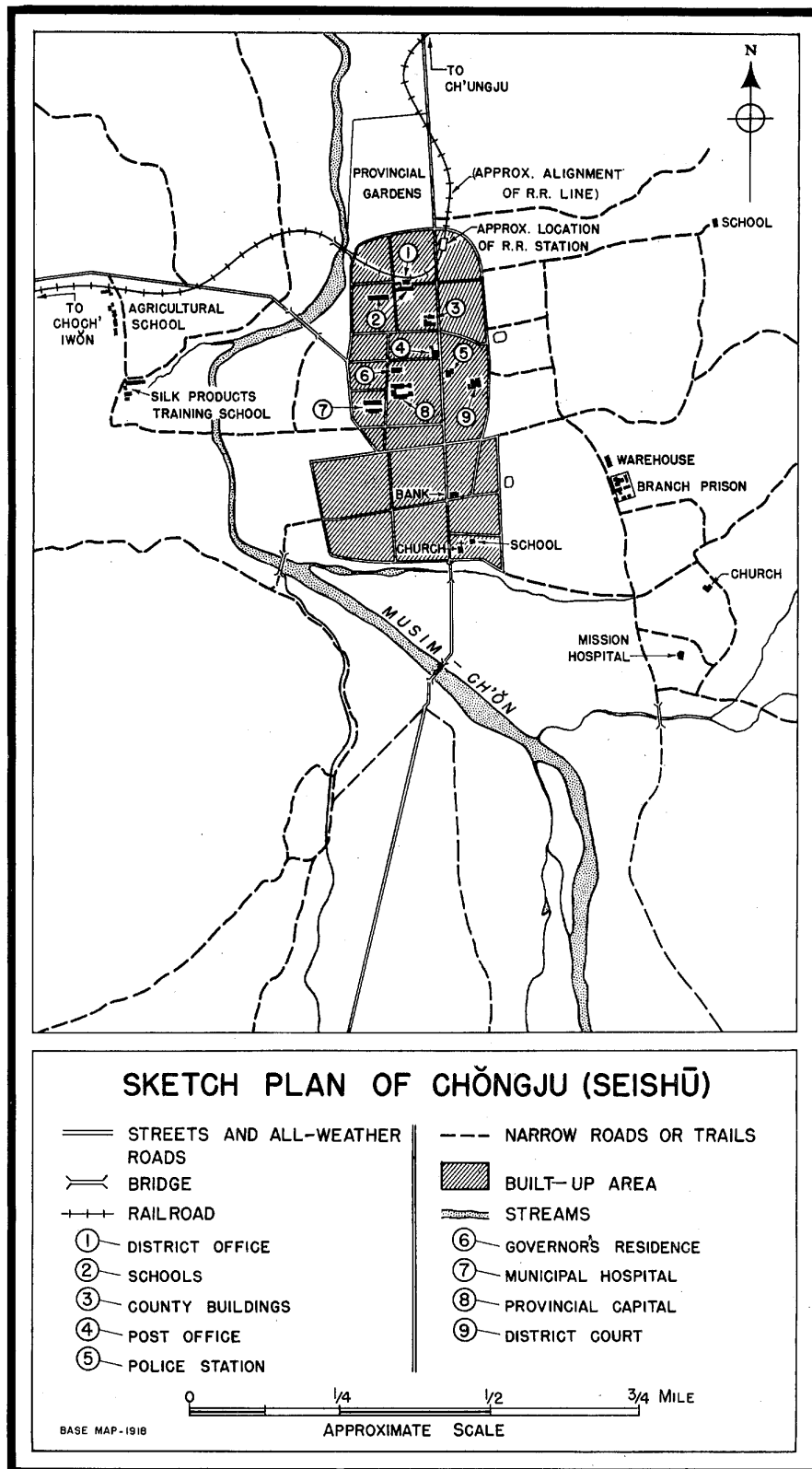
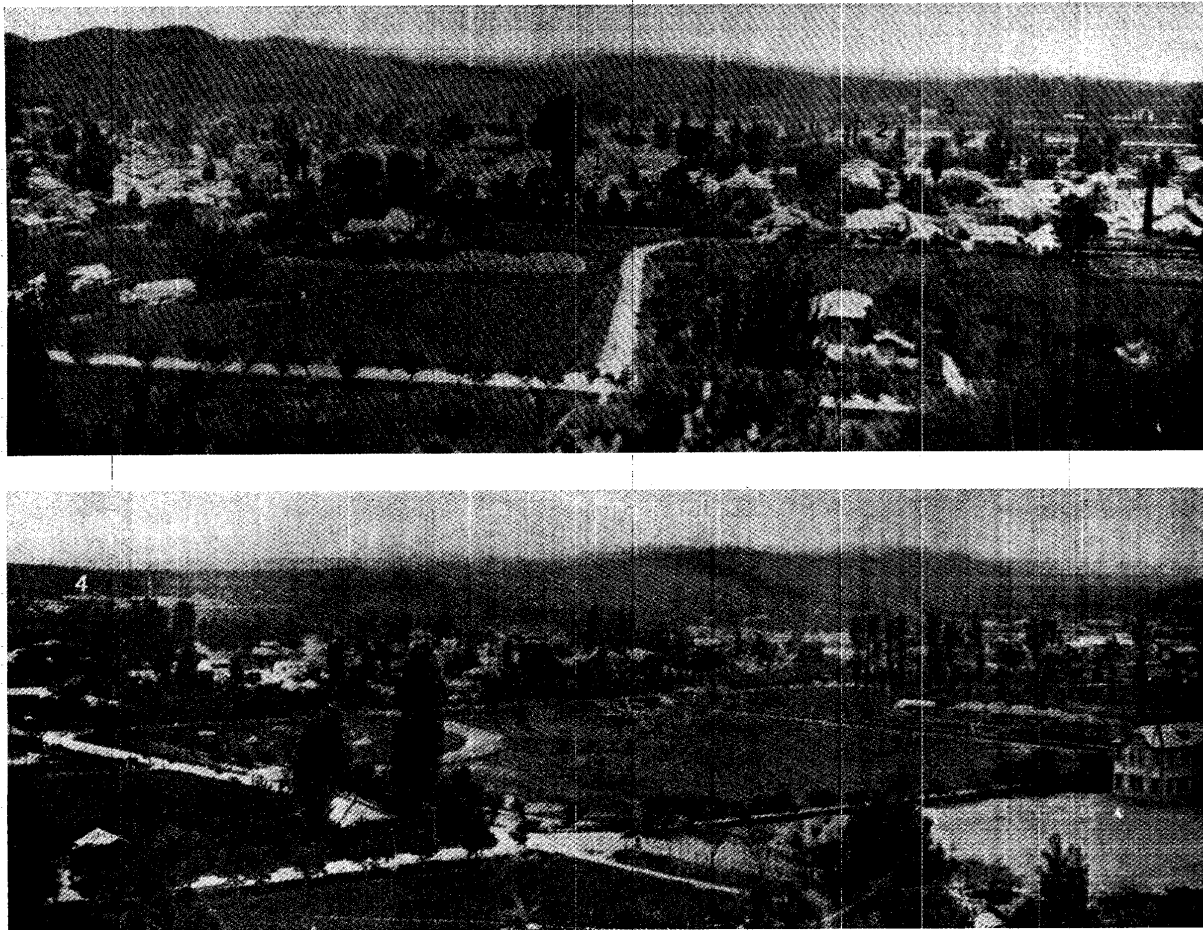


FIGURE VIII - 39. Ch'ongju.
Sketch map.

FIGURE VIII - 40. *Ch'ongju*.

Panorama of city. Looking W. Before 1930. 1. Governmental buildings. 2. Musim-ch'on (Mushin-sen). 3. Silk Products Training School. 4. Agricultural school.

(6) *Public utilities.*

Ch'ongju has a gravity water system which was built in 1923. Electric power is available. Telegraph facilities are in the post office and the telephone exchange is located in the government district. The town has modern fire-fighting apparatus.

82. *West-central Korea*

A. *Introduction.*

The 3 provinces of Kyonggi (Keiki), Hwanghae (Kōkai), and P'yongan-namdo (South Heian) are the traditional homes of Korean culture and the economic and political center of Korea. The 2 largest cities, Kyongsong (Keijō), the capital, and P'yongyang (Heijō), dominate the area and are major transportation centers. Each is served by a port, Kyongsong by Inch'on (Jinsen), and P'yongyang by Chinnamp'o (Chinnampo) (FIGURE VIII - 129).

The area was developed early in Korea's history because of its favorable location with respect to the older civilization of China, and has maintained its lead largely because of its central location within Korea. Although there are several large plains,

the climate is more severe than that of southern Korea and the agricultural population is sparser, even in the rich province of Kyonggi. On the other hand, the area contains coal and iron mines, and draws on the waterpower and minerals of northern Korea. For these reasons, a varied industrial development has taken place in recent years, and many new plants have been started during the war.

B. *Kyongsong (Seoul, Keijō; 1940 population: 935,464).*

(1) *Importance.*

Kyongsong, the capital and largest city of Korea, is near the center of the peninsula (PLAN 41). It is the hub of the principal roads and railroad lines of Korea (FIGURE VII - 54), and is the western terminus of the best route from the east coast. Industrial growth has been rapid in recent years, most of it in the suburban areas, particularly in Yongsan (Ryūzan) on the Han-gang (Kan-kō; river), and in Yongdungp'o (Eitoho), just across the river (PLAN 41). Other industries are at Sosa (Sosha) and at Pup'yong (Fuhei), along the rail line between Kyongsong and Inch'on (Chemulpo or Jinsen). The city contains the military headquarters of one of the 2 Japanese army divisions permanently stationed in Korea, as well as the gendarmerie headquarters. Although Kyongsong is one of the old-

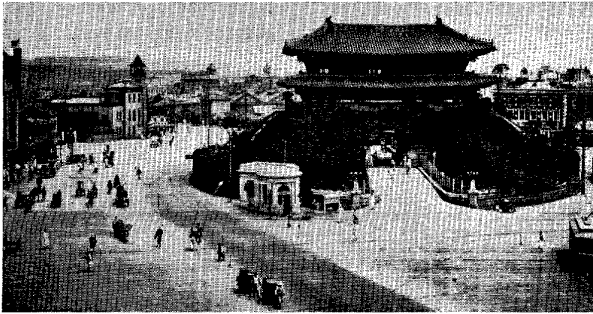


FIGURE VIII - 41. *Kyongsong*.
South Gate. Looking NE. About 1935.

est cities in Korea, its facilities have been much modernized. The old city wall, which was about 11 miles long, is now in ruins, but some of the gates remain (FIGURE VIII - 41).

(2) *Means of access.*

(a) *Water.* The Han-gang, which is navigable for small

river steamers and steam launches, flows along the western and southwestern suburban sections, though the main part of the city is some distance from it (PLAN 41). Since the construction of a good railway from the port of Inch'on to Kyongsong, river transportation has decreased in importance. Native boats are able to navigate upstream for a distance of about 180 miles.

(b) *Rail.* Kyongsong is the principal rail center in Korea, as all major north - south lines pass through it (FIGURE VII - 54). It is on the Pusan - Kyongsong - Mukden line, and is the terminus of the circuitous alternative rail line through the mountains from Pusan and of the important single-track line to Wonsan (Genzan) and northeast Korea. A double-track rail line connects Kyongsong with Inch'on, 20 miles to the west. Important rail yards and shops are in and near the city.

(c) *Road.* Kyongsong is the hub of Korea's principal all-weather roads (FIGURE VII - 54). One extends about 60 miles to the south, where it branches, one road running to Mokp'o (about 225 miles south of Kyongsong), and the other south-

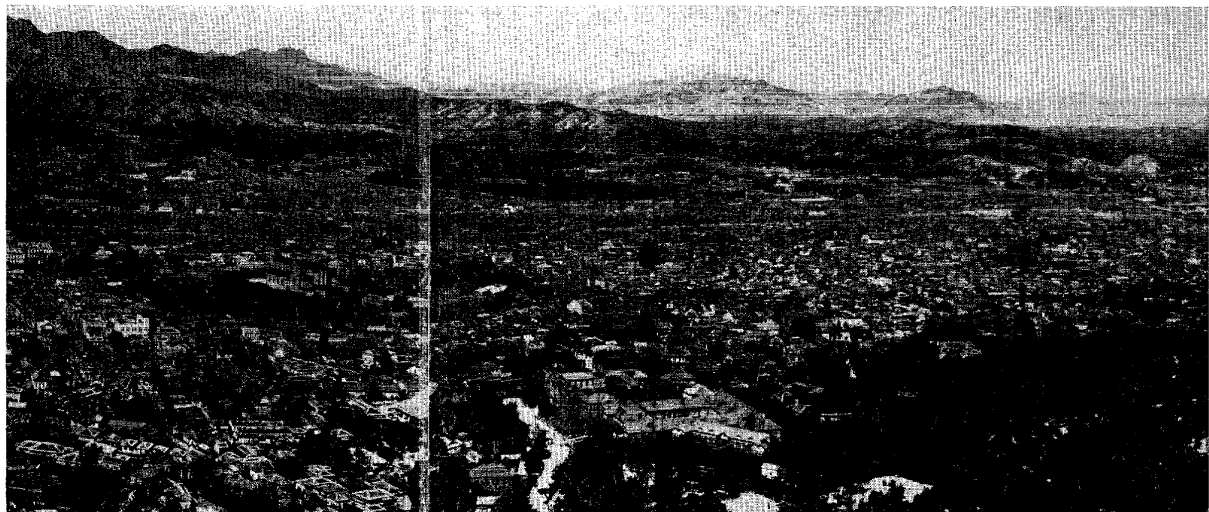
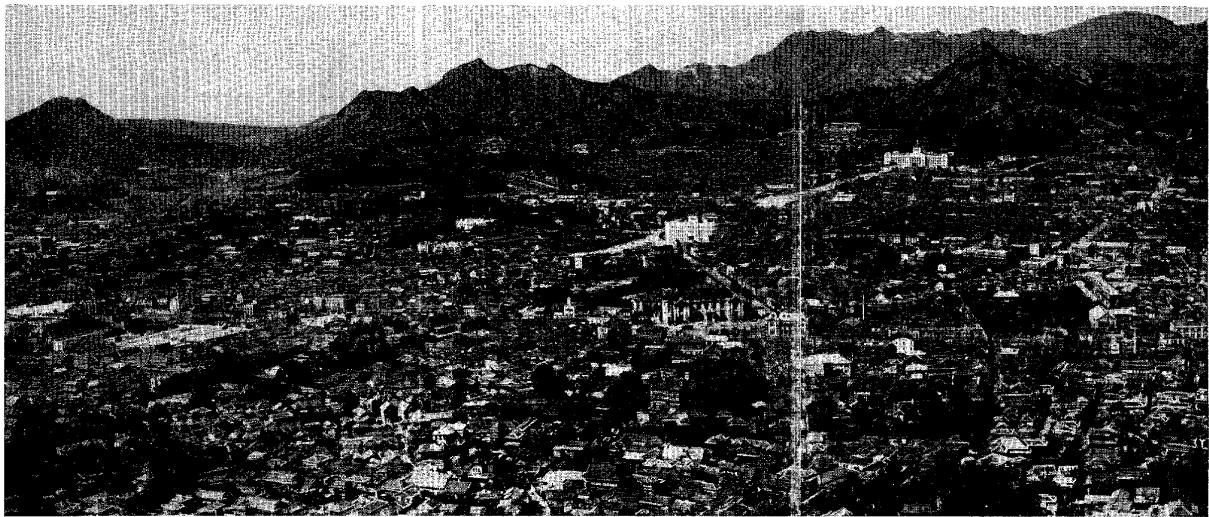


FIGURE VIII - 42. *Kyongsong*.
Panorama of city. Looking generally NW.

west 240 miles to Pusan, via Taejon (Taiden) and Taegu (Taikyū). A primary, all-weather road connects Kyongsong with Sinuiju (Shingishū), on the Manchurian border about 265 miles to the northwest. A third all-weather road connects Kyongsong with Wonsan (120 miles), Ch'ongjin (Seishin) (400 miles), and Najin (Rashin) (430 miles), all on the northeast coast of Korea. Inch'on, Kyongsong's port, is the terminus of another all-weather road.

(d) *Air.* There is an airfield on an alluvial plain about 4½ miles southwest of Kyongsong, and another about 7 miles west-southwest of the city.

(3) *Physical characteristics.*

(a) *Relation to surface features.* Kyongsong lies in a basin among granite hills which rise abruptly around the edges of the city (PLAN 41 and FIGURES VIII - 42 and VIII - 43). The Han-gang flows between Yongsan and Yongdungp'o, the southwestern suburbs of Kyongsong. Nam-san (South Mountain), which reaches an elevation of about 800 feet, separates the eastern part of Kyongsong from Yongsan.

(b) *Shape and dimensions.* Kyongsong has a bi-nuclear development consisting of 2 roughly circular areas which are connected by rail, highway, and a streetcar line (PLAN 41). The northern area is the old city of Kyongsong, which is the principal residential and administrative center, and the southern

is the more recent industrial and military development of Yongsan.

(c) *Degree of compactness.* The city is densely built, with spurs radiating along valleys in the surrounding hills and along roads and railroads. There has been little settlement in the hilly area.

(d) *Street plan.* The principal streets form a regular pattern, but secondary streets are crooked and have many short dead-end extensions. The main streets are wide, hard-surfaced, all-weather roads (FIGURES VIII - 44 and VIII - 45). There are 2 important east - west thoroughfares; the northern of them (East Gate Street) extends the length of the city; the other turns south in the center of Kyongsong and continues south through Yongsan.

(e) *Differentiated sections.* The main administrative and commercial sections are in the old part of Kyongsong, while industrial (FIGURE VIII - 46) and military (FIGURE VIII - 47) development has been principally in the suburban areas. The chief business district lies along the 2 main east - west streets in Kyongsong proper (FIGURE VIII - 48). The administrative offices are mainly in the northern part of the city around the Government General Building (FIGURE VIII - 49). The main Korean residential section is the old central part of Kyongsong, while the Japanese residential settlements are along the hilly fringes of the older city.



FIGURE VIII - 43. *Kyongsong.*

General view from square in front of Chōsen Jinsha (shrine). Long, low roof at left is a car shed in the yards near the railway station. Looking NW.



FIGURE VIII - 44. *Kyongsong*.
Looking S on Nandaimon Street from a point just S of the Bank of
Chōsen. After 1935.

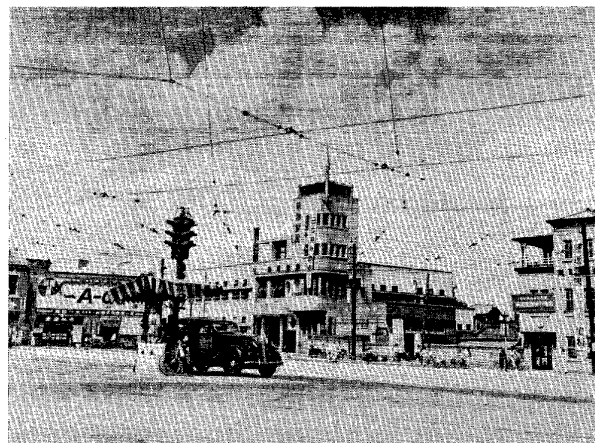


FIGURE VIII - 45. *Kyongsong*.
Scene in business district, showing traffic light, traffic police, and con-
dition of roads. After 1935.



FIGURE VIII - 46. *Kyongsong*.
Industrial section of Yongsan (Ryūzan). Looking W.



FIGURE VIII - 47. *Kyongsong*.
Infantry barracks, east of the railroad tracks in Yongsan (Ryūzan).
Looking W.



FIGURE VIII - 48. *Kyongsong*.
District Government Building (large white building in center back-
ground). Looking NNE. Before 1933. Note streetcar line in center.

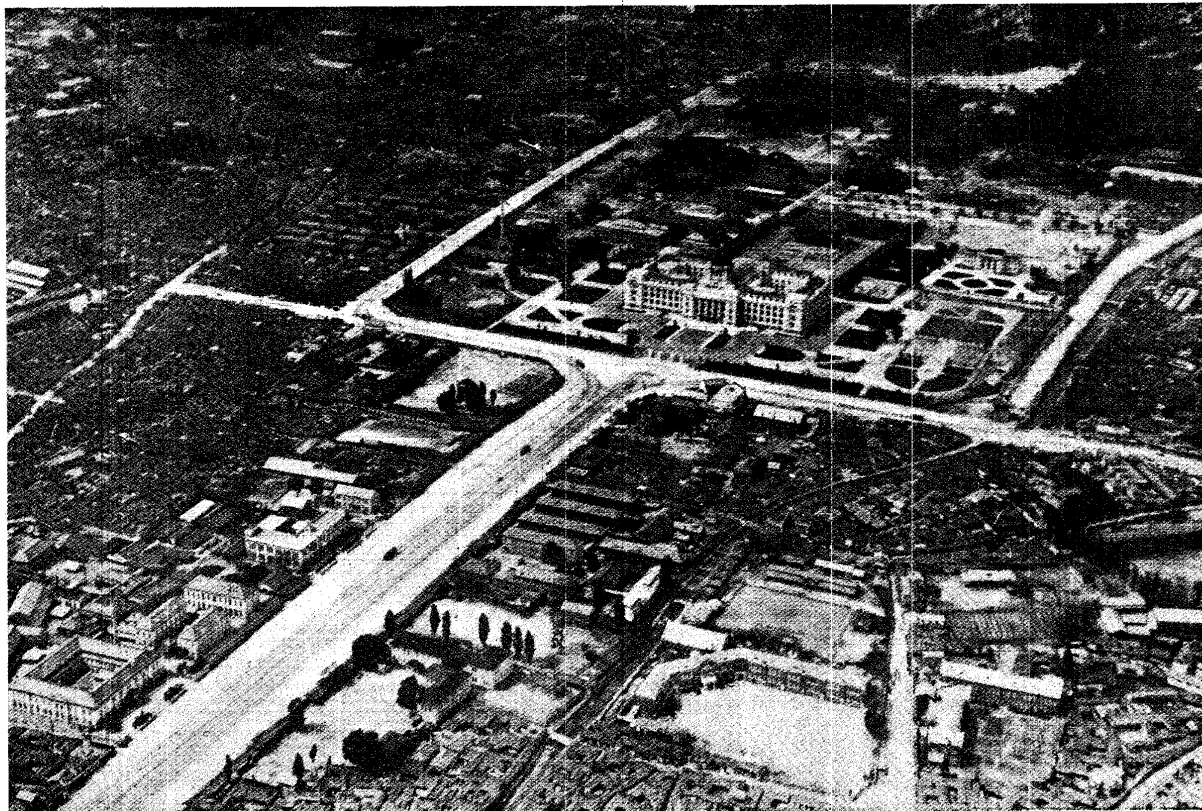


FIGURE VIII - 49. *Kyongsong*.
Government-General Building. Looking NW.

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FIGURE VIII - 50
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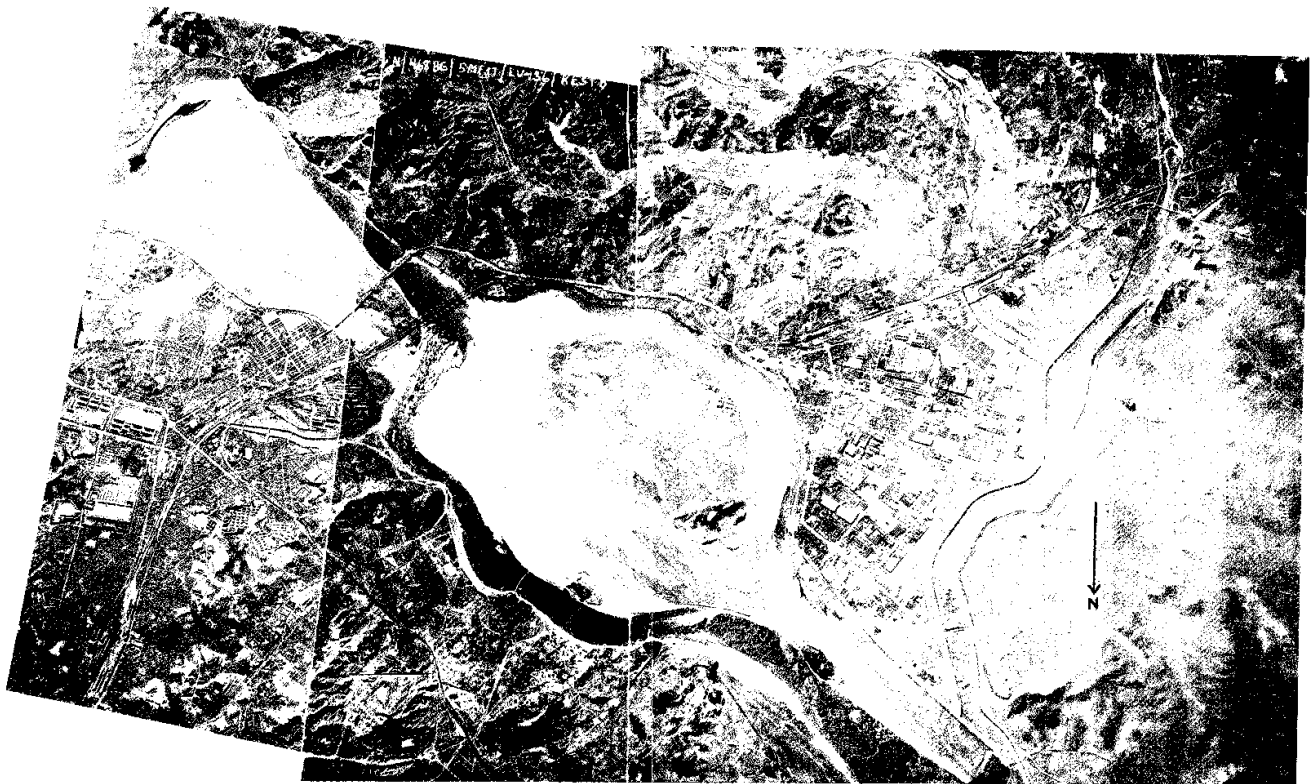


FIGURE VIII - 50, Kye-soe
Vertical view of south-east part of city showing Yongsu and Yongsu Lake January 1945

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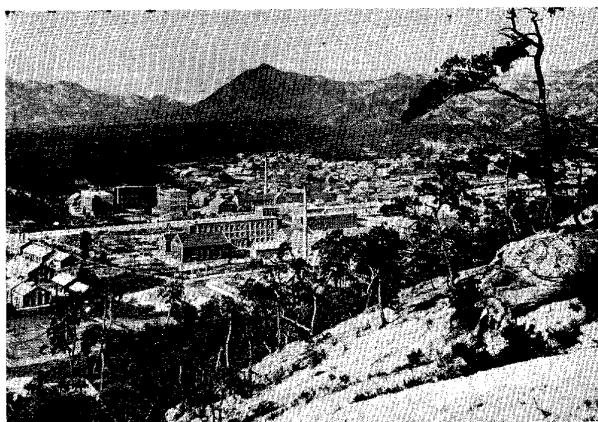


FIGURE VIII - 51. Kyongsong.
Keijō Imperial University.



FIGURE VIII - 52. Kyongsong.
Chōsen Hotel. Looking NW. Before 1925.

(4) Factories.

The industrial development which has occurred in the Kyongsong area has resulted in the construction of new plants and the expansion of the existing factories. Most of this development has been in the industrial suburbs but many smaller factories are in the central part of the city. The Ryūzan Railway Repair Shops, the largest in Korea, manufacture rolling stock and other railroad equipment. The Ryūzan Manufacturing Company produces locomotives, freight and passenger cars, bearings, girders, mining machinery, and other steel products. Other important factories in this area are:

- Hironaka Industrial and Commercial Company, southeast of the railroad station (machine tools and mining machinery).
- Japan Precision Instrument Company.
- Keijō Chemical Industry Company.
- Chōsen Chemical Fertilizer Company.
- Chōsen Explosives and Gun Company.
- Kantō Machine Manufacturing Company.

(5) Warehouses and storage.

Large military warehouses are located in Yongsan. Storehouses for food are located in the vicinity of all railroad stations in this area. There is a coal storage area on the west side

of the railroad tracks and south of Namdaemun railroad station.

(6) Billeting facilities.

(a) *Military barracks.* Military barracks occupy a large part of Yongsan and are reported to have accommodation for 50,000 troops. The military area, which is east of the railroad and yards, consists of barracks, drill field, arsenals, and administration buildings (FIGURES VIII - 47 and VIII - 50).

(b) *Schools.* There are many schools and colleges in Kyongsong which could be converted into barracks. Keijō Imperial University (FIGURE VIII - 51), Chōsen Christian College, the Japanese technical school, and most of the primary and secondary schools are well-built, modern structures.

(c) *Hotels.* The principal hotels are the Hanto Hotel (opened in May 1938) and the Chōsen Hotel (FIGURE VIII - 52), with about 100 rooms, operated by the Chōsen Railway Company.

There are a large number of workers' barracks, especially near the industrial developments, which could be used as military barracks.

(7) Health and sanitation facilities.

(a) *Hospitals.* Kyongsong's hospitals have a total of more than 1,500 beds. The principal ones are:

- Government Hospital (Imperial University), 500 beds.
- Government Hospital (Keijō Medical School), 200 beds.
- Municipal Hospital, 100 beds.
- Government Military Hospital, estimated 100 beds.
- Severance Union (Mission Medical School), 240 beds.
- Two other mission hospitals, total of 90 beds.
- Two private hospitals, total of 240 beds.
- Railroad hospital, 100 beds.
- Red Cross Hospital, 150 beds.

(b) *Sewage disposal.* There is a sewage disposal plant in Kyongsong.

(8) Buildings.

Japanese residences in Kyongsong are of wood or brick construction, but the native houses, especially those around the fringes of the city, are built of stone or mud, with projecting tiled or thatched roofs (FIGURES VIII - 53 to VIII - 55). Government and industrial buildings are generally more modern and of more substantial construction (FIGURES VIII - 56 to VIII - 60).

(9) Internal transportation.

(a) *Streetcar.* Two streetcar companies operate lines in Kyongsong (FIGURE VIII - 61). The Keijō Tramway Company line is about 9 miles long, and the Keijō Electric Company Tramways operate a 22-mile system. Car barns are near the east gate. The streetcar service is believed to be very efficient.

(b) *Road.* Roads within the city are hard-surfaced and motorable throughout the year (FIGURE VIII - 62). Good bus service was maintained as late as 1940.

(c) *Canal and river ferry.* Suburban sections of the city are built along the Han-gang, which is of minor significance in internal transportation.



FIGURE VIII - 53. *Kyongsong*.
View of Korean section.



FIGURE VIII - 54. *Kyongsong*.
View of Korean section along the Han-gang.

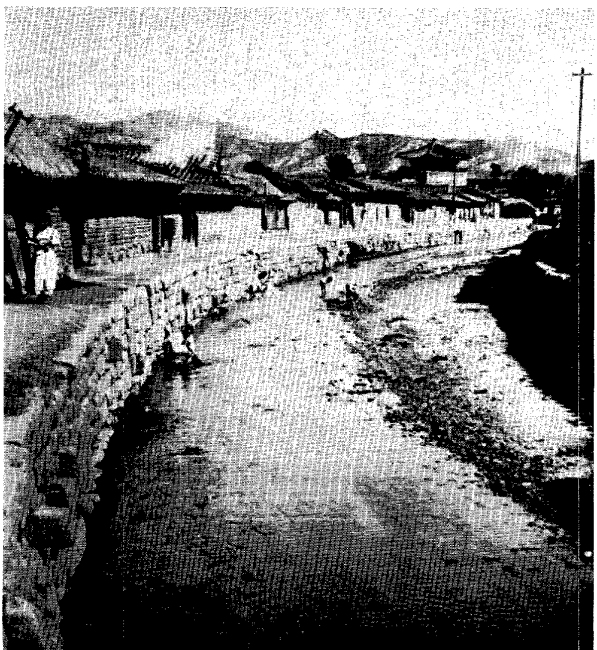


FIGURE VIII - 55. *Kyongsong*.
View of Korean section, showing houses along a canal. 1919.

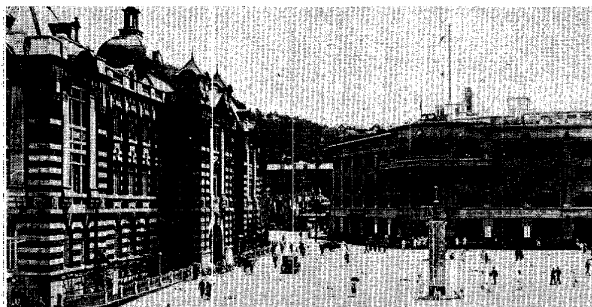


FIGURE VIII - 56. *Kyongsong*.
View of business section, showing post office (left) and a department store (right). Looking S. About 1935.

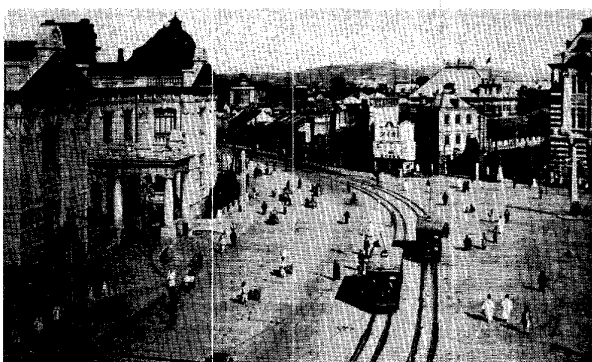


FIGURE VIII - 57. *Kyongsong*.
Bank of Chosen (left) and post office (right edge). Looking NE. Before 1940.

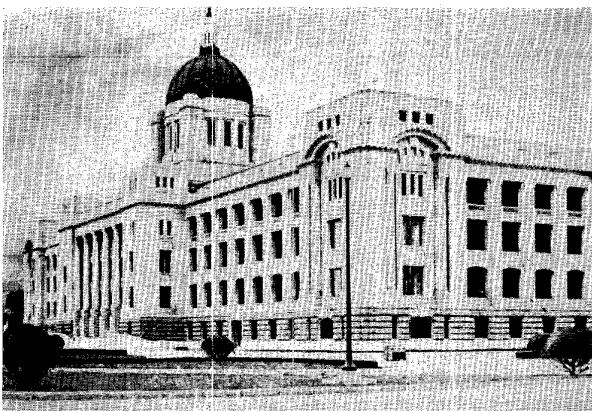


FIGURE VIII - 58. *Kyongsong*.
Government General Building. Looking NW. Since 1925.

(10) *Public utilities.*

(a) *Water.* The source of Kyongsong's water supply is the Han-gang. The intake is about 3½ miles southeast of the city, and water pressure is maintained by pumps. In 1937, about 50% of the city's population was served. The average daily consumption for the entire city in 1936 was about 10,000,000 gallons. The Inch'on reservoir is located southwest of Kyongsong on the south bank of the Han-gang (PLAN 41).

(b) *Power.* Kyongsong is served by the North Korean power network. There are at least 2 steam power plants in the

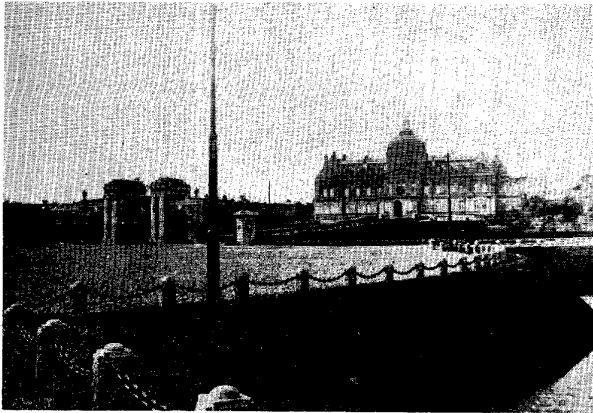


FIGURE VIII - 59. *Kyongsong*.
Official residence of Japanese Governor General of Korea. Looking NW. 1925.

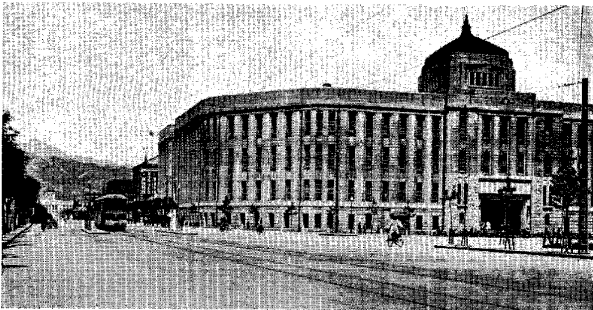


FIGURE VIII - 60. *Kyongsong*.
View of District Government Building (City Hall), showing streetcar line. Looking N. About 1935.

city: the Keijō-Ryūzan Steam Plant on the north bank of the Han-gang (a stand-by plant), and the Keijō Tojinri Steam Plant, which serves the city and streetcar systems.

(c) *Ice*. There are believed to be enough ice plants to serve the city's normal requirements.

(d) *Gas*. The city gas works, located in Yongsan near the Han-gang (PLAN 41), served 20,124 consumers and had about 176 kilometers of mains distributing gas to the city in 1936.

(e) *Communications*.

1. **TELEPHONE AND TELEGRAPH.** Kyongsong, the center of the Korean telephone and telegraph network, has more instruments and better equipment for telephonic and telegraphic communications than any other Korean city. The telephone exchange is near the Government General building. The city is on the cable line which connects Tōkyō and Mukden.

2. **RADIO.** Radio station JODK, the largest in Korea, has at least 2 transmitters, one of 50,000 watts and the other of 10,000 watts. A broadcasting station is located about ½ mile south of the Government General Office. Radiotelephone and radiotelegraph service is also maintained.

(f) *Fire-fighting*. In 1936 there were 1,412 fire hydrants distributed throughout Kyongsong. Fire-fighting service is believed to be efficient (FIGURE VIII - 63).

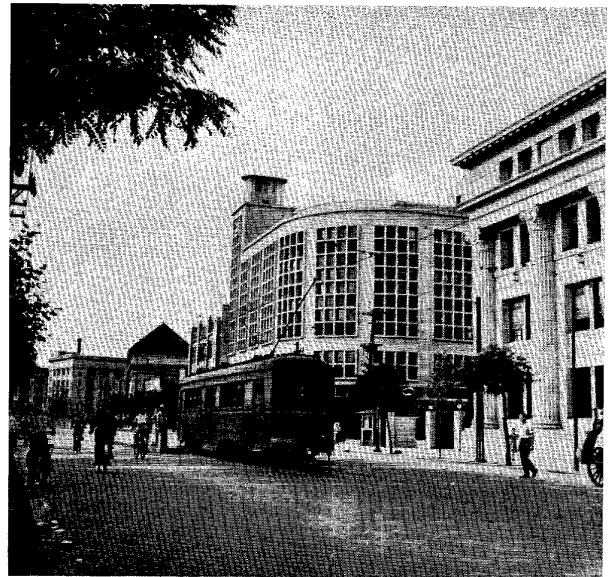


FIGURE VIII - 61. *Kyongsong*.
View of Nandaimon Street, showing department stores and streetcar line. The northeast end of the Bank of Chōsen appears just beyond the streetcar. Looking S. Before 1936.



FIGURE VIII - 62. *Kyongsong*.
View of street leading N to the Government-General Building, in background. Looking N.

(11) *Repair and service facilities.*

(a) *Railroad*. The Yongsan shops are the largest railroad repair shops in Korea. The Ryūzan Railway Repair Shops and the Ryūzan Manufacturing Company build and repair locomotives, freight and passenger cars, and manufacture other steel equipment. The Ryūzan Manufacturing Company also has a repair shop in Yongdungp'o, across the Han-gang from Kyongsong.

(b) *Machine shops and foundries*. There are machine shops and foundries connected with the railroad repair shops and the industrial establishments.

(c) *Garages*. Kyongsong is believed to have a number of automobile and bus garages.

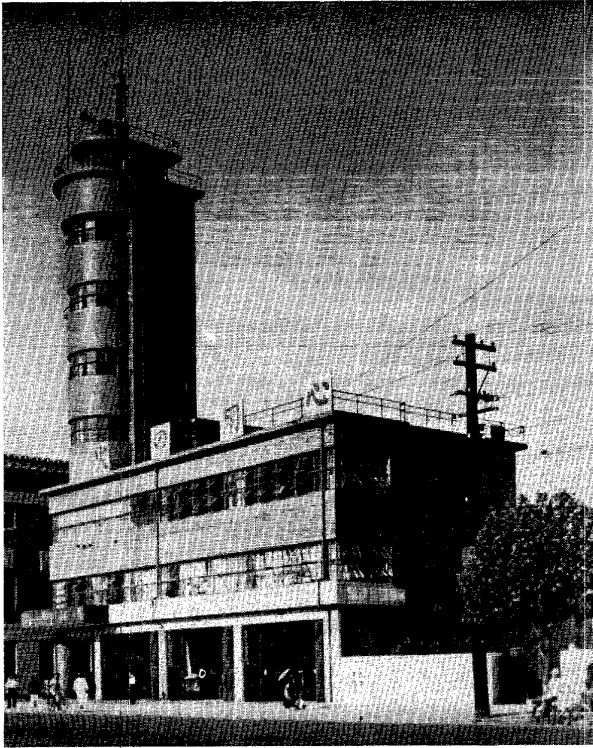


FIGURE VIII - 63. Kyongsong.
View of firehouse.

C. Inch'on (Chemulpo or Jinsen; 1940 population: 171,165).

(1) *Importance.*

Inch'on, the fourth largest city of Korea, is about 25 miles east of Kyongsong, of which it is the port. In 1937 it handled 1,950,000 tons of shipping, and ranked second to Pusan (Fusan) as a port. In recent years it has shared in the rapid development of industries in the Kyongsong area.

(2) *Means of access.*

(a) *Water.* Inch'on harbor, one of Korea's principal deep-water ports, is sheltered by 2 islands, Wolmi-do (Getsubi-tō) and Sowolmi-do (Shō-getsubi-tō) (FIGURES VIII - 64 to VIII - 66). Two breakwaters prevent silting of the channel, which is dredged across flats that are exposed at low tide. A tidal basin, protected by lock-gates, lessens the difficulties of loading and unloading which result from a 30-foot tidal range (FIGURES VIII - 67 and VIII - 68). The lock basin provides about 3,500 lineal feet of wharfage. A new and much larger lock basin is under construction just south of the old basin (FIGURES VIII - 65 and VIII - 66).

(b) *Rail.* A double-track, 4'8½"-gauge railroad extends to Kyongsong, where it connects with the Pusan - Kyongsong - Mukden line. A narrow-gauge, private railroad runs from Inch'on to Suwon (Suigen) and Yoji (Reishū), to the south-east (FIGURE VII - 54).

(c) *Road.* A first-class, all-weather road connects Inch'on with Kyongsong and with the road network of Korea (FIGURE VII - 54).

(d) *Air.* The nearest airfield is about 20 miles east-northeast of Inch'on, near Kyongsong.

(3) *Physical characteristics.*

Inch'on is built on the tip of a small peninsula (FIGURE VIII - 64). The main part of the city is on level land, but there are gentle hills and slopes in and near the city. The city is roughly rectangular in shape, the longer axis trending north-west - southeast. There are many small compact areas in the political district of Inch'on, all connected to the main business district extending along the southern and western sides of the city. Recent aerial photographs (FIGURES VIII - 65 and VIII - 66) show an expansion of the city toward the east. There are several small woodland areas, the largest along the eastern margin. The street pattern is well developed and roughly rectangular in the main section along the southern edge of Inch'on, but elsewhere is very irregular. Only a few streets connect the different built-up areas of the city. The commercial and industrial sections are concentrated along the southern, western, and northwestern margins of the city.

(4) *Factories.*

The most important factories are: Nippon Car Works, Chōsen Riken Metals Company (produces steel by electric process), Chōsen Ship Building and Iron Works, Ryūzan Manufacturing Company (produces railroad rolling stock), Toyo Cotton Factory, Chōsen Machine Manufacturing Company (produces mining machinery), Nippon Flour Company, and Korea Match Factory. There are also salt refineries, breweries, rice mills, a soap factory, and a coal briquette factory.

(5) *Warehouses and storage.*

The major warehouses are near the piers and along the tidal basin, in the southern part of Inch'on. The Standard Oil Company storage area is on the east side of Wolmi-do. Naval coal and ammunition storage areas are on the northwest side of Wolmi-do.

(6) *Billeting facilities.*

There are probably a number of military barracks connected with the naval training station on Wolmi-do.

The larger schools, which might be suitable for billeting, are located along the margins of the city.

(7) *Health and sanitation facilities.*

(a) *Hospitals and medical personnel.* The provincial hospital has an operating room and 75 beds. There are other hospitals in Inch'on.

(b) *Sewage disposal.* Inch'on is reported to have a sewage disposal plant.

(8) *Buildings.*

Buildings of importance, in addition to those mentioned, are the Meteorological Observatory (FIGURE VIII - 69) and the Post Office (FIGURE VIII - 70).

(9) *Internal transportation.*

Most of the city streets are motorable. The main highway begins near the piers in the southwestern part of the city, runs northeast to and across the railroad, and continues parallel with the railroad to Kyongsong.

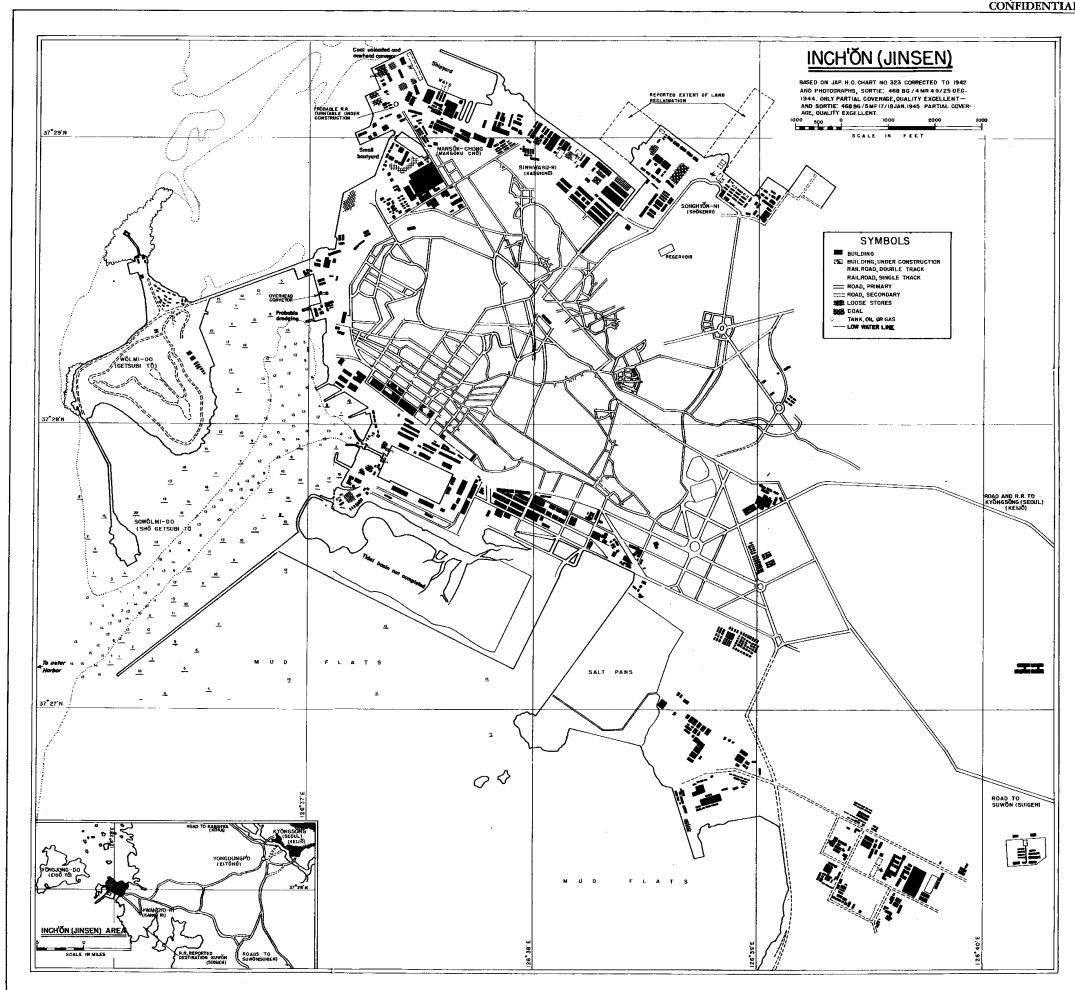


FIGURE VIII - 64. Incheon.
Plan of city and port. Enclosed in Chapter VI.
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FIGURE VIII - 65. *Inch'on.*

Vertical airview of city, showing old lock basin (upper left) and new lock basin under construction, just S of the old basin. 1944.

(10) *Public utilities.*

(a) *Water.* Inch'on's water is supplied by an aqueduct from an intake and storage reservoir on the Han-gang (river) near Kyongsong. Another storage reservoir and a filtration plant are on the northeastern outskirts of the city. In 1936, about 35% of the population obtained an average daily supply of 1,220,000 gallons. 839 wells were then in operation. The water company office is near the astronomical observatory in the west-central part of Inch'on.

(b) *Power.* Inch'on receives its power from the north Korean network. A transformer station is near the Infectious Diseases Research Institute on the eastern edge of the city.

One electric company building is near the water tower on the western edge of the city, and another is northeast of the tidal basin.

(c) *Gas.* The gas works is on the southeastern side of Wolmi-do.

(d) *Communications.*

1. **TELEPHONE AND TELEGRAPH.** Telephone and telegraph land lines connect Inch'on with Kyongsong and with the network which serves the principal cities of Korea.

2. **WIRELESS.** A radiotelegraph station for coastal shipping is in the central part of Wolmi-do.

FIGURE VIII - 66. *Inch'on.*

Vertical airview of eastern section of city, showing industrial development and growth toward the east. 1944.

(e) *Fire-fighting.* At least 2 fire department stations serve the city; one is in the central section near the municipal stadium, and the other near the northeast corner of the tidal basin.

(11) *Repair and service facilities.*

(a) *Marine.* Two shipbuilding plants were planned in 1940: the Chōsen Shipbuilding and Iron Manufacturing Company, and the Chōsen United Marine Transportation Company.

(b) *Railroad.* The Nippon Car Works, an important manufacturer of locomotives and freight cars, is equipped to do repair work.

(c) *Machine shops and foundries.* The Chōsen Machine Manufacturing Company, the Chōsen Riken Metals plant, and several other plants have modern, well-equipped shops.

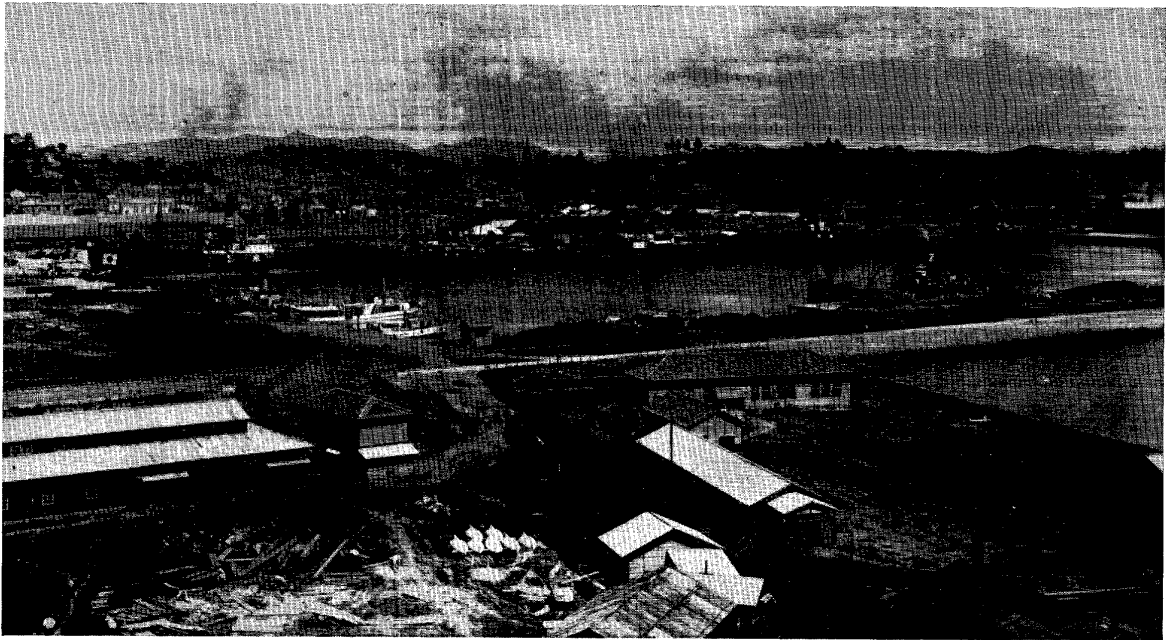


FIGURE VIII - 67. *Inch'on.*
View of lock-gate dock in southern part of city. Looking NE. Before 1930.



FIGURE VIII - 68. *Inch'on.*
View of city from above Wolmi-dō, showing city, piers, and lock-gate dock. Looking E.

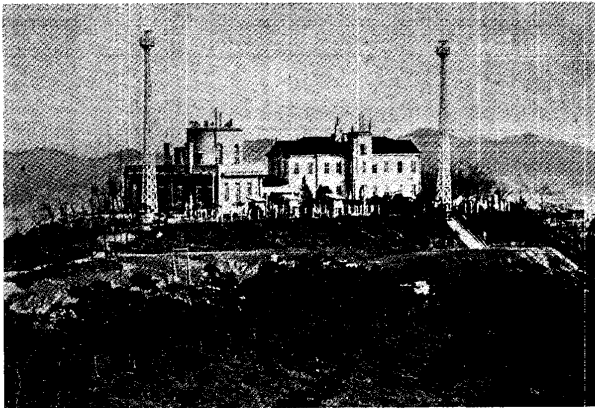


FIGURE VIII - 69. *Inch'on*.
Meteorological observatory. 1936 or earlier.

D. Kaesong (Songdo or Kaijō; 1940 population: 72,062).

Kaesong (FIGURE VIII - 71), a former capital and the tenth city of Korea, is on the main Pusan - Kyongsong - Mukden railroad and road. The city, about 35 miles northwest of Kyongsong, lies in a region of hilly terrain about 10 miles north of the Han-gang (Kan-kō). Production of ginseng is the principal industry of Kaesong, and there are many warehouses, drying fields, and processing houses in the northern part of the city. A branch of the Monopoly Bureau was also located in Kaesong. There were 2 hospitals. The waterworks served about 25% of the population in 1936. A steam plant was constructed between 1936 and 1940.

E. Haeju (Kaishū; 1940 population: 62,651).

(1) Importance.

Haeju, the provincial capital of Hwanghae-do (Kōkai-do), lies about a mile inland from the head of Haeju-man (Kaishū-wan; bay); it is 79 miles north-northwest of Kyongsong (Keijō) and 67 miles south of P'yongyang (Heijō). It is the site of a large explosives plant and of the largest Korean cement plant. Its port, Yongdangp'o (Ryūtōho), has been reported in use as a naval base (FIGURE VIII - 72 and PLAN 38).

(2) Means of access.

(a) *Water*. Navigation from the Yellow Sea through Haeju-man to Yongdangp'o is via a narrow channel obstructed by reefs and bars. There is fair anchorage off the 500-foot quay, but during the period from January to March the harbor is often frozen over. Yongdangp'o, about 3 miles south of Haeju on a small peninsula, is connected with Haeju by a single-track, 2'6"-gauge line.

(b) *Rail*. The Mitsubishi Chōsen Railroad Company operates the single-track, 2'6"-gauge line which connects Haeju with Ongjin (Ōshin), to the west, with Sariwon (Shariin), to the north, and with T'osong-ni (Dojō-ri), to the east. The Pusan - P'yongyang - Mukden main line runs through Sariwon and T'osong-ni (FIGURE VII - 54).

(c) *Road*. An improved road over 12 feet wide runs from Yongdangp'o to Haeju. Similar roads lead out of the city to Ch'wiya-ri (Suiya-ri) on the west and to Yonan (Enan) on the east. The road to Chaeryong (Sainei) goes east from the city and then curves north-northwest (FIGURE VII - 54).



FIGURE VIII - 70. *Inch'on*.
Post office.

(d) *Air*. An airfield, formerly used as a civil landing ground, is situated southeast of the town in the area east of the Kwangsok-ch'on (Kōseki-sen) between the bay shore and the railroad.

(3) Physical characteristics.

(a) *Relation to surface features*. Haeju is built on a tongue of level land above the confluence of 2 streams, the Kwangsok-ch'on and the Oam-ch'on (Gogan-sen). It is surrounded by high hills except on the southeast edge, which opens onto rice fields (FIGURE VIII - 73).

(b) *Shape and dimensions*. The city extends about 1½ miles northwest to southeast and ½ to ¾ miles north to south. It is irregular in shape, with extensions along the roads to Ch'wiya-ri and Chaeryong.

Haeju is compact (FIGURE VIII - 74). The northwest section contains the prefectural office, the county office, the city office, and the provincial hospital. A new industrial area is reported southeast of the city along the railroad. The major industrial plants are located on the peninsula between the city and Yongdangp'o.

(4) Factories.

The Chōsen Cement Company's plant (Chōsen Kayaku Seizo K.K.), the largest in Korea, is located 3 miles south of Haeju on reclaimed land at the tip of the peninsula. A spur connects it with the railroad, and it is served by its own piers. There is an iron works within the compound.

The Chōsen Explosives Manufacturing Company, a large gunpowder plant covering an estimated 30 acres, is approximately 1½ miles southwest of Haeju. Workers' barracks are west of the plant, and the surrounding hills are utilized for underground storage.

The West Chōsen Heavy Industry Company (Seisen Jukogyo K.K.), on the peninsula, produces mining and cement-making machinery, precision tools, and small ships.

One of the chief Korean gold refineries is operated by the Mitsubishi Mining Company. Reports state that a copper smelter or a combined smelter and refinery is under construction.

The Chōsen Flour Mills Company is located at Haeju.

Confidential

CITIES AND TOWNS

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(5) Warehouses and storage.

Storage space is available within the compounds of the larger plants, such as the Chōsen Explosives plant and the Chōsen Cement plant.

(6) Billeting facilities.

(a) *Barracks.* The military police headquarters in the northern part of the city should afford some billeting space.

(b) *Schools.* Of the 10 schools within the city, the agricultural and sericultural schools, on the northwest fringe of the city, can probably accommodate the greatest number of persons.

(7) Health and sanitation facilities.

Haeju has 3 hospitals. The provincial hospital has an operating room and an estimated capacity of 75 beds. The Norton Memorial Hospital (Methodist), a brick building, has an operating room, X-ray equipment, and 75 beds. Tuberculosis patients are housed in individual cottages. An isolation hospital is in the northeast section of the city. There is a sewage system in Haeju.

(8) Buildings.

The Haeju prison is east of the railroad station, and the prison farm is northwest of the prison, next to the court house.

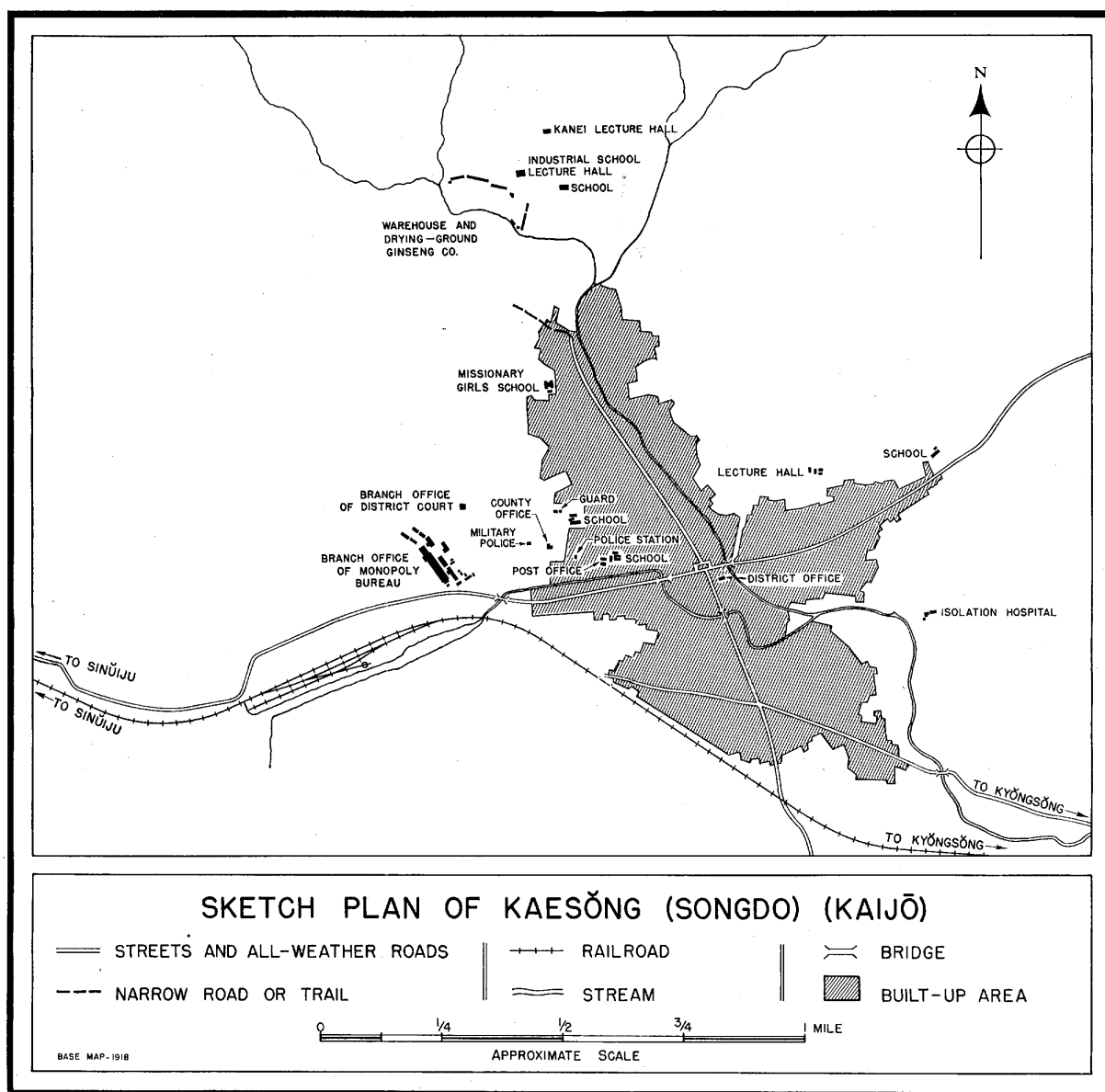


FIGURE VIII - 71. *Kaesong.*
Sketch map.



FIGURE VIII - 72. Haeju.
Yongdang-p'o.



FIGURE VIII - 73. Haeju.
Airview of city. Probably looking N. Published 1931.

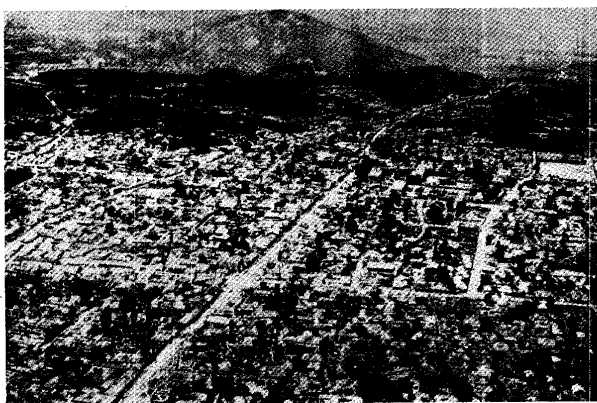


FIGURE VIII - 74. Haeju.
View of city, showing compactness of settlement.

Another prison is in the northwest portion of the city near the county and prefectural offices.

The post office, the city office, and a bank are east of the provincial hospital on the main east - west street. The police station is 2 blocks north of the bank.

(9) Internal transportation.

A ferry runs between Yongdangp'o and Chinp'o-gak (Shim-po-kaku), across the bay.

(10) Public utilities.

(a) *Water.* In 1939 the waterworks had an average daily capacity of 236,000 gallons and served 9,797 people.

(b) *Power.* The steam plant within the Chōsen Cement Company's compound has a capacity of 5,000 kilowatts and supplies Haeju and the vicinity with electricity.

(c) *Ice.* An icehouse is located on the west bank of the Kwangsok-ch'on, northeast of the city.

(d) *Communications.* Haeju has a telephone and telegraph system which is connected with the main Korean network.

F. P'yongyang (Heijō; 1940 population: 285,965).

(1) Importance.

P'yongyang, the second largest city in Korea and the provincial capital of P'yongan-namdo (South Heian), is approximately 125 miles northwest of Kyongsong (Keijō) and 30 miles inland from the Huang Hai (Yellow Sea) (PLAN 42 and FIGURE VIII - 75). It is the site of the main Korean airfield and of the second most important arsenal complex on the Asiatic mainland. Army garrisons maintained in and near the city have been greatly enlarged in recent years. The 54% increase in population between 1937 and 1940 is a result of the establishment of new industries and the conversion of peacetime plants to war production. Munitions and aircraft parts are the chief products. The mineral and power resources of northern Korea and the nearby Sa-dong (Jidō) coal mines give the city a position of strong economic importance. The oldest city in Korea and formerly the capital, P'yongyang has long been a leading cultural center and has large and active Christian missions. It is a focal point of anti-Japanese political activity.

(2) Means of access.

(a) *Water.* P'yongyang is on the Taedong-gang (Daidō-kō), about 35 miles above Chinnamp'o, its port. Although small launches and barges are able to reach P'yongyang, where the river is 1,200 feet wide, vessels over 3,000 tons are unable to go beyond Chinnamp'o.

(b) *Rail.* The double-track Pusan - Kyongsong - Mukden main line passes through P'yongyang from southeast to northwest. A line branches from the main line just north of the city and provides an alternative route to Manchuria by way of Man'ojin (Mampochin), on the border; a branch of the latter line crosses the mountains to Wonsan (Genzan), on the east coast. Other lines extend from P'yongyang southwest to Chinnamp'o and east to the Sa-dong (Jidō) coal mines and the Onōda Cement plant.

(c) *Road.* P'yongyang is on the main north - south road from Sinuiju (Shingishū) to Kyongsong and Pusan (Fusan), and is connected with the east coast by a road to Wonsan. This road branches off the main road just north of the city, as does a lesser road to Sunch'on (Junsen). The road from P'yongyang to Chinnamp'o is the best road leading out of the city.

(d) *Air.* P'yongyang's extensive airfield is on the east bank of the Taedong-gang, northeast of the heart of the city (FIGURE VIII - 76). Facilities include paved runways, hangars, repair shops, administration buildings, and barracks.



FIGURE VIII - 75. *P'yongyang.*
View of main part of city. Looking N.

- | | |
|--|-----------------------------------|
| 1. Main railroad station. | 8. Gendarmerie. |
| 2. Officers' quarters. | 9. Mounted police barracks. |
| 3. 39th Brigade headquarters. | 10. Municipal building. |
| 4. Army supply depot. | 11. Provincial Office. |
| 5. 77th Infantry Regiment barracks. | 12. Government Medical College. |
| 6. Anti-aircraft unit and powder magazine. | 13. District and Appellate Court. |
| 7. Post office. | |

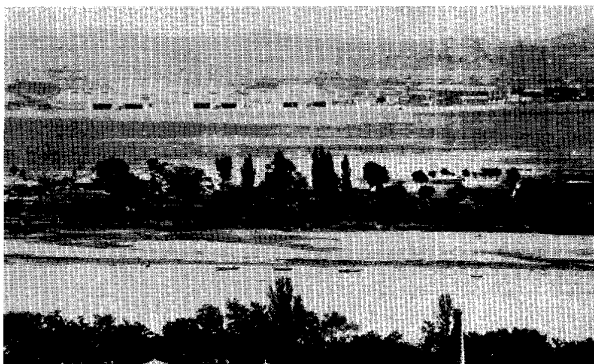


FIGURE VIII - 76. *P'yongyang.*
P'yongyang airfield; Taedong-gang in foreground. Looking E. 1934.

A false airfield has been reported on farm land adjacent to the northwest edge of P'yongyang.

A landing ground east of the Sa-dong mine is apparently used in conjunction with the new military development south of the mine (PLAN 44).

There are 2 landing grounds outside P'yongyang: 1 at the junction of the Taedong-gang and a tributary at a point 2½

miles west-southwest of the city, the other 12¼ miles south of P'yongyang.

(3) *Physical characteristics.*

P'yongyang covers an area approximately 3½ miles north-south and 1½ miles east-west along the west bank of the Taedong-gang. Except for hills which fringe the river in the northern part of the city, the surface is fairly flat, stretching out into rice fields west of the Pot'ong-gang (Futsū-kō), a small stream roughly paralleling the western boundaries of P'yongyang. The northern end of the city, the original old walled stronghold, is characterized by an irregular street pattern and compact settlement (FIGURES VIII - 77 and VIII - 78); its population is principally Korean. The predominantly Japanese southern half of the city is the commercial and administrative area. The arsenal and the military garrison are both in the southern part near the main railroad station. A conglomeration of flimsy Japanese-type houses and modern concrete buildings is characteristic of this part of the city (FIGURE VIII - 79).

A new industrial area stretching about 3 miles south from the airfield has grown up on the east bank of the Taedong-gang (PLAN 43).



FIGURE VIII - 77. *P'yongyang*.
Taedong-gang in foreground; Daidomon (gate) in center foreground. Looking W. 1931.



FIGURE VIII - 78. *P'yongyang*.
View of city from Botan-dai (Peony Hill). Looking S. 1922. 1. Taedong-gang. 2. Daidomon (gate). 3. Mission residences and schools.

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FIGURE VIII - 89
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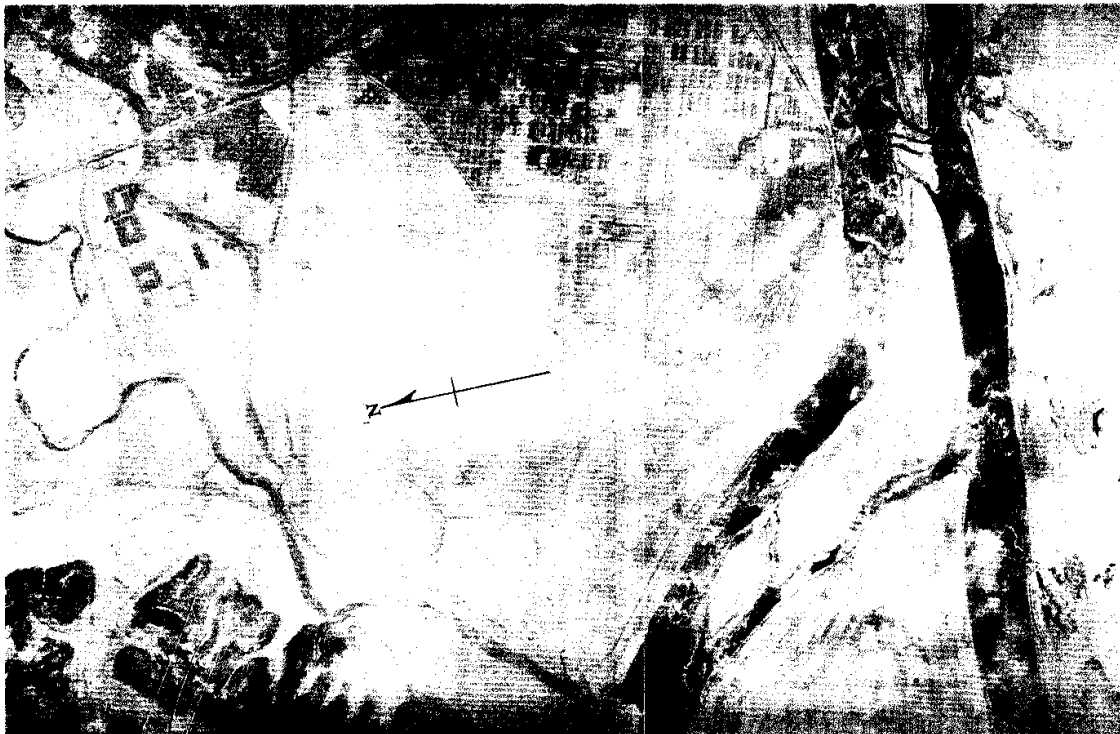


FIGURE VIII - 89, Pyongyang.
Aerial view of city and of arsenal and military drill grounds to the northwest, December 1941

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FIGURE VIII - 81
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FIGURE VIII - 81, Pyongyang
Airsview of city, December 1941.

- | | |
|---|----------------------------------|
| 1. Arsenal. | 6. Pyongyang prison. |
| 2. Main railroad station and yards. | 7. Police headquarters. |
| 3. Government Medical College. | 8. Electric plant. |
| 4. Government Medical College Hospital. | 9. Dai Nippon Sugar Refinery. |
| 5. Garrison area. | 10. Japan Corn Products Company. |

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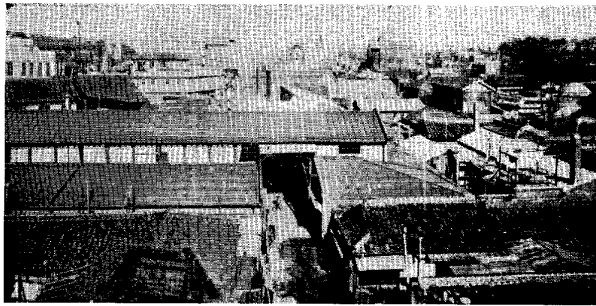


FIGURE VIII - 79. *P'yongyang.*
View of Japanese part of city. Probably looking N. 1935.

(4) *Factories.*

The P'yongyang arsenal, southwest of the main railroad station, is second in importance only to the great Mukden arsenal (FIGURES VIII - 80 and VIII - 81). It produces rifles, and light automatic weapons. Many small shops throughout the city make parts for use in the arsenal. The air arsenal, east of the airport, manufactures ordnance, parts, and possibly engines. The Showa aircraft plant, south of the hangars on the airfield, makes aircraft and air frames. Another aircraft factory has been reported in the same area.

The large Japan Corn Products plant, covering 60 acres on the east bank of the Taedong-gang, formerly produced glucose and corn starch and may now be making alcohol (FIGURE VIII - 82); it has its own electric power plant and water reservoir.

North of the Japan Corn Products plant are the Kanegafuchi Spinning Mills, now converted to the manufacture of war materials, and the Dai Nippon (Japan) Sugar Refinery, probably producing alcohol. Two rubber factories are in the northwest section of the city. The Omura silk mill is south of the arsenal.

Other factories in or near P'yongyang are:

Chōsen Riken Metals Company (aluminum).
Taiden Steel Manufacturing Company (steel drilling equipment).
Japan Gold Production Company (steel drilling equipment).
Taihei Company (ethyl alcohol).
Japan Salt Company (salt and chemical by-products).
Government tobacco factory.
Kilns and brick factories.
The Onōda Cement Company at Sungho-ri (Shōko-ri), 10 miles east of P'yongyang (third largest cement plant in Korea; FIGURE VIII - 83).

Throughout the city small shops and home industries are turning out machine parts, ceramics, and metal objects.

(5) *Warehouses and storage.*

Extensive warehouse facilities are in the arsenal area and on the west bank of the Taedong-gang, where there is a large concentration just south of the highway bridge. The Texas, Rising Sun, and Japan oil companies have warehouses east of the river, and Standard Vacuum warehouses are on the western bank and below the railroad bridge on a mid-stream island.

(6) *Billeting facilities.*

(a) *Military barracks.* About 100,000 men can be accommodated in the new frame barracks and officers' quarters

of the large military area 3 miles northeast of the railroad bridge over the river (PLAN 43); many of these buildings are 2 to 4 stories high. The garrison area north of the main railroad station has barracks of brick and wood for the 77th infantry regiment (FIGURE VIII - 84) and for an antiaircraft regiment. At the present time the area is estimated to have barracks for 20,000 men.

(b) *Schools.* There are numerous schools throughout the city. The Methodist (FIGURE VIII - 85) and Presbyterian mission campuses, northeast of the garrison area, have several brick and wooden buildings. The medical college south of the garrison area affords limited billeting facilities.

(c) *Hotels.* The western-style P'yongyang Railway Hotel, on Taewajong-t'ong (Daiwachō-dōri), can accommodate 25 persons (FIGURE VIII - 86). Inns, apartment buildings, and residential hotels offer billeting possibilities.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* Korean staffs have taken over the mission hospitals. The 90-bed Union Christian Hospital, on the Presbyterian campus, and the 150-bed government medical college hospital (FIGURE VIII - 87) are the largest and best equipped in the city.

The army hospital in the garrison area has an estimated capacity of 50 beds.

The railway hospital, which has fair equipment and an operating room, can accommodate 50 persons.

There are 3 isolation hospitals on the outskirts of the city: one in the north, one to the west beyond the P'yongyang prison, and one to the east across the Taedong-gang.

(b) *Sewage disposal.* Part of the sewage is disposed of by a sewerage system. Some of the modern buildings have good plumbing and septic tanks.

(8) *Buildings.*

The city hall, chamber of commerce, and provincial office are east of the garrison area. The P'yongyang prison is north of the garrison. A women's prison is northeast of the Presbyterian campus; due north of it is the weather observatory. Railroad employees' quarters are opposite the main station. The police headquarters is a stone building northwest of the highway bridge.

(9) *Internal transportation.*

(a) *Streetcar.* A streetcar line, starting opposite the main railroad station, runs north the length of the city on the principal street and terminates at the Nishi Station. A branch, used by workers at the mines, goes east over the highway bridge to Sa-dong. The cars are of the overhead trolley-type (FIGURE VIII - 88).

(b) *Road.* Charcoal-burning busses supplement the streetcars. Taxis were formerly in use in P'yongyang but have been replaced by rickshas.

(c) *Ferry.* Ferries are numerous across the Taedong-gang, but the highway and railroad bridges handle most of the traffic.

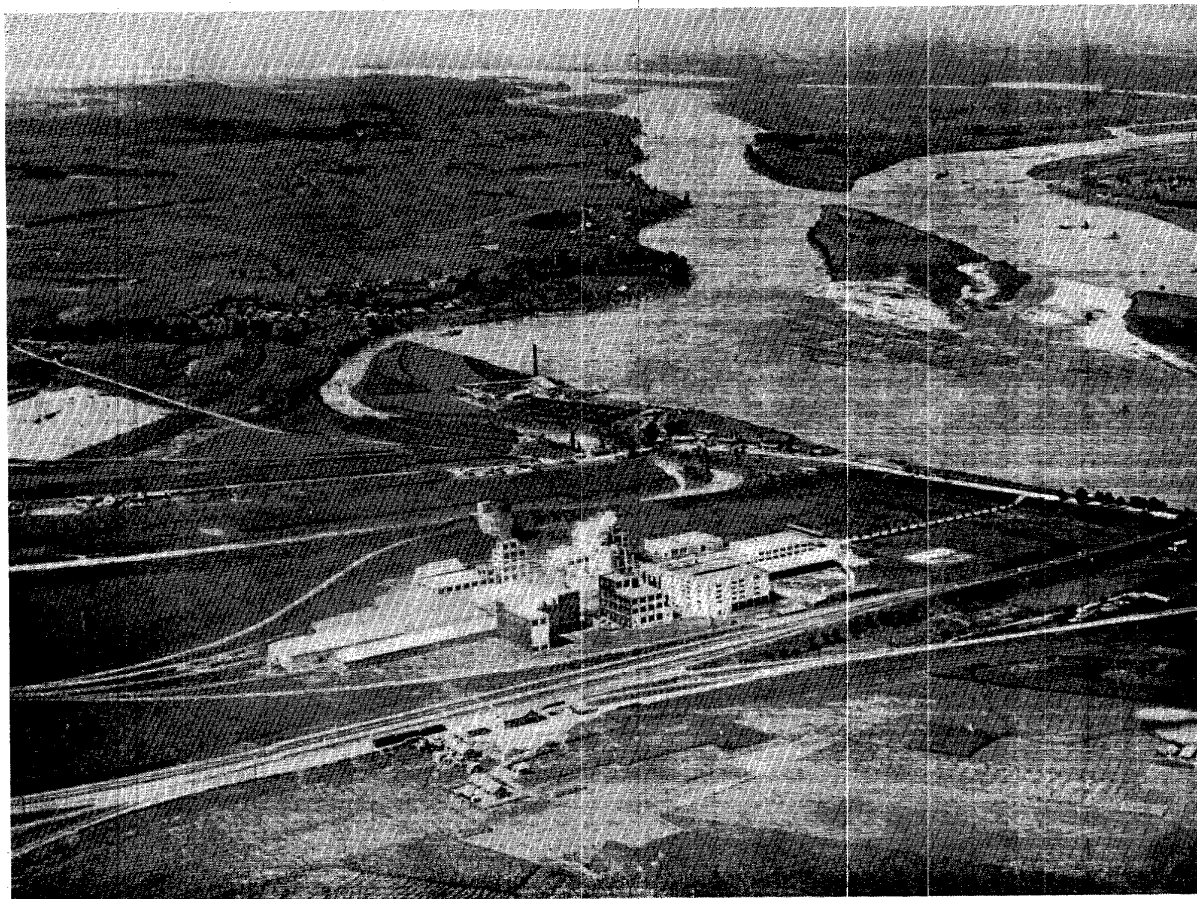


FIGURE VIII - 82. *P'yongyang.*

Airview of Japan Corn Products Company plant; Taedong-gang station and the Pusan - Kyongsong - Mukden main railroad line in foreground; Taedong-gang railroad bridge at right. Looking W. 1941.

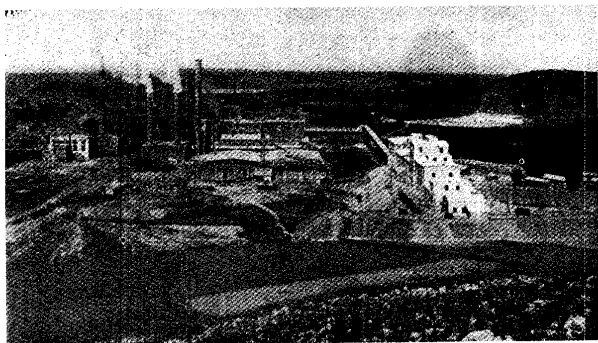


FIGURE VIII - 83. *P'yongyang.*

Onoda Cement Company at Sungho-ri (Shōko-ri), 10 miles E of P'yongyang.



FIGURE VIII - 84. *P'yongyang.*

Barracks in the garrison area. Looking NW. 1918.



FIGURE VIII - 85. *P'yongyang*.
Buildings on the Methodist Mission campus. Looking N. Prior to 1936.

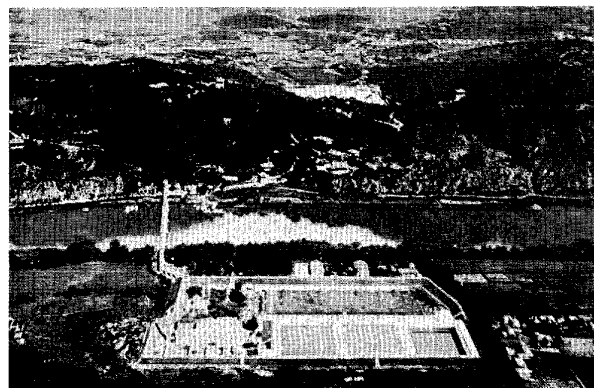


FIGURE VIII - 89. *P'yongyang*.
Waterworks and filter beds of Nungna-do (island). Aqueduct from island to Botan-dai (Peony Hill), in northern part of city. Looking W.

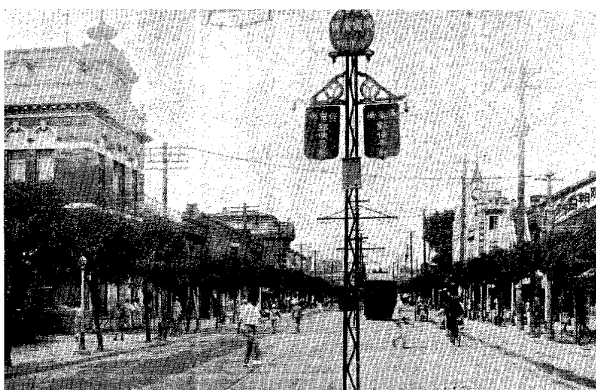


FIGURE VIII - 86. *P'yongyang*.
Yamato-tori (street); P'yongyang Railroad Hotel in left foreground.



FIGURE VIII - 90. *P'yongyang*.
View of Nungna-do (island) from west bank of Taedong-gang, showing 2 branches of river and airfield on far shore. Looking E. 1934.

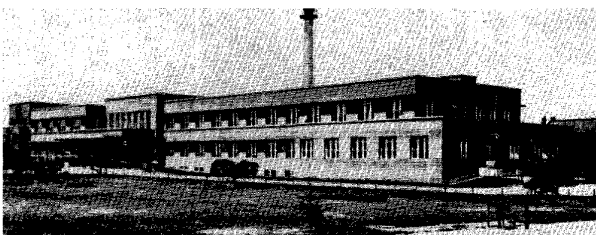


FIGURE VIII - 87. *P'yongyang*.
Government Hospital. Published 1935.

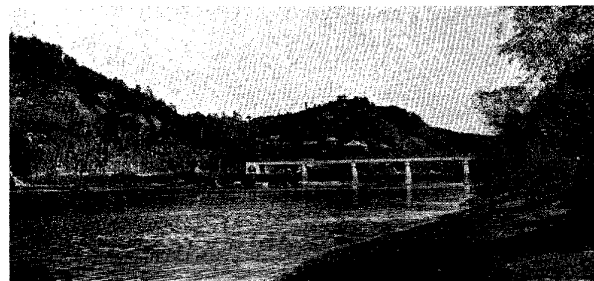


FIGURE VIII - 91. *P'yongyang*.
Aqueduct across Taedong-gang, connecting waterworks on Nungna-do with distribution reservoir on mainland (left and center); Botan-dai (Peony Hill) in background. Looking N. Before 1936.

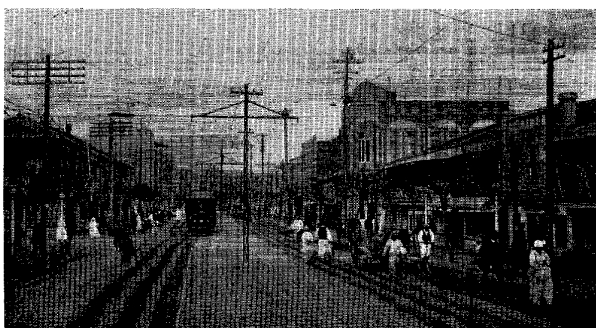


FIGURE VIII - 88. *P'yongyang*.
Yamato-tori, one of the main streets in the city.

(10) *Public utilities.*

(a) *Water.* The waterworks and filtering plant are on Nungna-do (Ryōra-tō), an island in the river northeast of the city (FIGURES VIII - 89 and VIII - 90). An aqueduct carries the water west to a distribution reservoir on the mainland (FIGURE VIII - 91). Hydrants are scattered throughout the city, but proper fire protection is inadequate. In 1939, the average daily water supply was 4,500,000 gallons, and 116,745 persons were served.

(b) *Power.* P'yongyang obtains much of its power by transmission lines from north Korean hydroelectric plants. A transformer station is west of the garrison. There are also 2 steam plants: one on the east bank of the Taedong-gang north of the Dai Nippon (Japan) Sugar Refinery, and the other directly across the river on the opposite bank.

(c) *Ice.* River ice is cut in the winter.

(d) *Gas.* The P'yongyang gas plant has 2 ovens and 1 storage tank.

(e) *Communications.* There are telephone and telegraph connections with the main Korean system, and with Japan, Manchuria, and China.

Station JBBK broadcasts on 2 frequencies. Radiotelephone and radiotelegraph are used in connection with the airfield.

(f) *Fire-fighting.* The fire department, 4 blocks north-west of the highway bridge, has some motorized equipment.

(11) Repair and service facilities.

(a) *Railroad.* There are well-equipped repair shops near the classification yards northwest of P'yongyang and also at the main station. There are streetcar barns next to the railroad station and in Song'yo-ri, on the east bank of the river.

(b) *Industrial.* Repairs can be made in the various industrial plants, particularly the Showa Aircraft works, the Japan Corn Products Company, the Kanegafuchi Spinning Mills, and the iron foundry south of the power plant in the city proper. The arsenal and the airfield have large repair shops.

(c) *Motor.* Government garages are maintained for buses, and the Ford and General Motors agencies operate 2 private garages.

G. Chinnamp'o (Chinnampo; 1940 population: 68,676).

(1) Importance.

Chinnamp'o, the port for P'yongyang (Heijō), is one of the 5 leading ports in Korea and the site of major non-ferrous metallurgical industries (FIGURE VIII - 92 and PLAN 44). It is on the north bank of the Taedong-gang (Daidō-kō), about 20 miles up the river's estuary. Rice, coal, and iron ore are the chief commodities handled by the port.

Chinnamp'o is an important transshipment point for military supplies and is reported in use as a naval base. It has bunkerage docks, the largest coal depot in Korea, and repair facilities.

(2) Means of access.

(a) *Water.* The approach to Chinnamp'o up the Taedong-gang is through a bay studded with mudflats and islands. Navigation is complicated by the 18-foot tidal range and by summer floods, and is stopped by ice for as long as 3 weeks in the winter months. At Chinnamp'o, the Taedong-gang is approximately 1 mile wide and has an average depth of 60 feet. Docking facilities include an open basin with quays which can accommodate four 3,000-ton vessels. Larger vessels can make use of the extensive deep-water anchorage off the basin and of the local lighters.

(b) *Rail.* The P'yongyang (Heinan) Line, a single-track branch of the Pusan - Kyongsong - Mukden main line, connects Chinnamp'o with P'yongyang, 34 miles northeast. Spurs lead to the Chinnamp'o docks and to the Japan Mining Company's smelter, east of the heart of the city.

A privately-owned standard-gauge line runs 22 miles north to Yonggang (Ryūkō).

(c) *Road.* The Chinnamp'o - P'yongyang highway roughly follows the main railroad line. Improved roads lead northwest to Kwangnyangman (Kōryōman) and north to Yonggang.

(d) *Air.* There is a military airfield at Kwangnyangman, northwest of Chinnamp'o.

(3) Physical characteristics.

Chinnamp'o is on the north bank of the Taedong-gang and is backed by hills. The street plan is irregular except for the district west of the basin. The town, roughly circular in shape, radiates about 1/2-mile in each direction from the city hall. Projections extend east and west along the coast and along the Yonggang and P'yongyang highways. Within the city proper the areas west of the dredged basin and around the railroad station are level; elsewhere the terrain is varied by small hills and swamps. The Hup'o-ch'on (Kōho-sen) flows southeastward through the city and empties into the Taedong-gang east of the basin.

The chief open spaces are around the reservoir and the city hall.

Industrial areas are concentrated along the waterfront and on the banks of the Hup'o-ch'on.

(4) Factories.

The large Chōsen Riken Metals Company plant, 3/4 mile west of the city, accounted for an estimated 20% of the total Korean magnesium production in 1942. It is also one of the 2 most important aluminum plants in Korea.

The Japan Mining Company smelter and refinery, an extensive plant east of the city on Hwa-do (Ka-tō), produces copper, lead, gold, and possibly zinc (FIGURE VIII - 93 and PLAN 44).

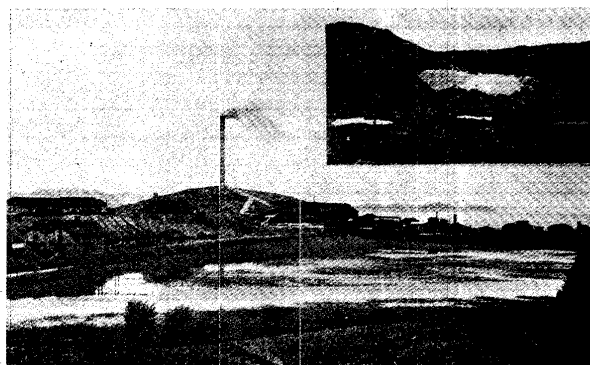


FIGURE VIII - 93. Chinnamp'o.
Japan Mining Company. Looking NE. Prior to 1919.

The Chōsen Nissan Chemical Industry Company, northeast of the Japan Mining Company, produces superphosphate of lime and heavy superphosphate; it may now be producing poison gas.

The Chung-ch'on Iron Works are southwest of the basin on the shore of the Taedong-gang.

The Chōsen Shoko Corporation produces agricultural and mining machinery.

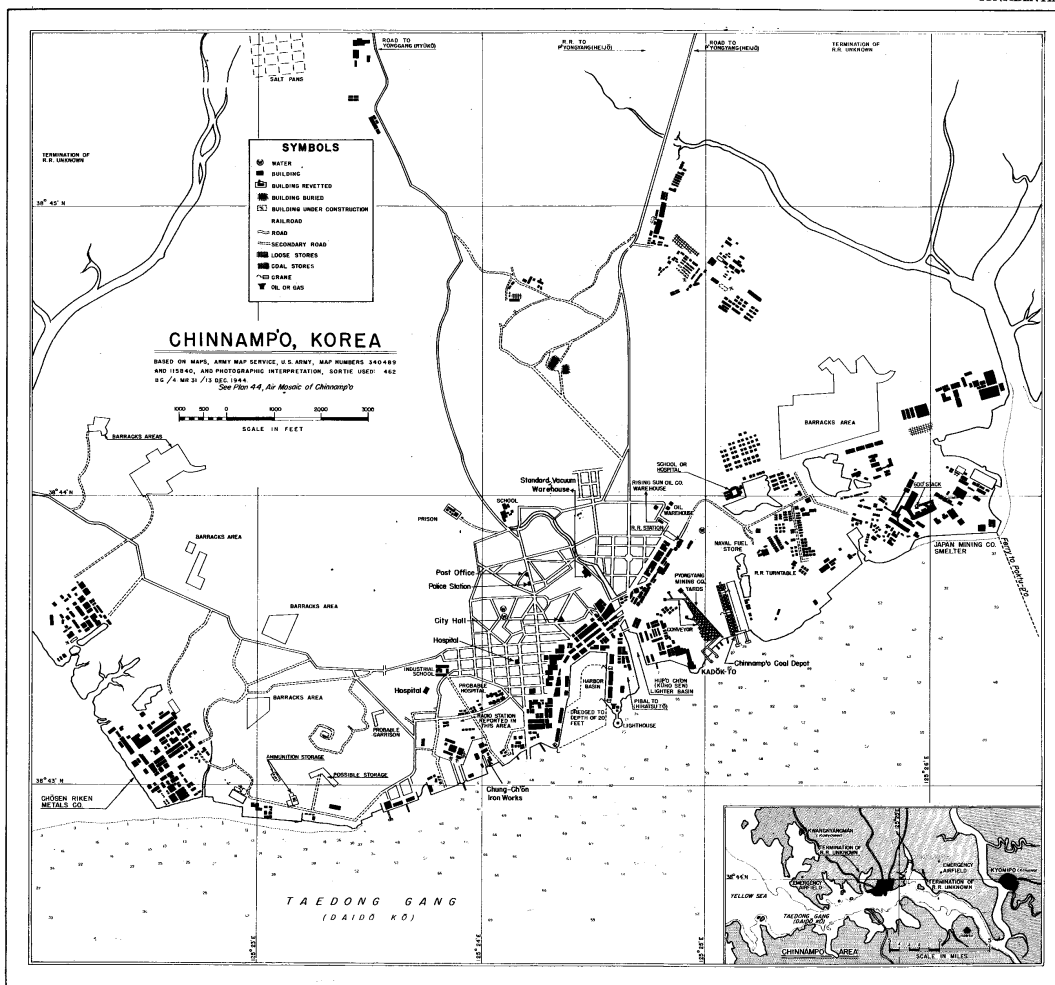


FIGURE VIII - 92. Chinnampo.
Plan of city and port. Enclosed in the figure is the
described in Chapter VI.

KYŎMPIŎ (KENJIHO)

BASED ON MAP - ARMY MAP SERVICE U.S. ARMY MAP
NUMBER 340490 - AND PHOTOGRAPHS, SORTIES:
462 BG/AMR 29/DEC.10'44 & 462 BG/AMR 31/DEC.13'44

SYMBOLS

- WIRE FENCE
- BUILDING UNDER CONSTRUCTION
- COAL STORES
- LOOSE STORES
- CRANE
- UNSPECIFIED TOWER
- ROAD, PRIMARY
- ROAD, SECONDARY
- RAILROAD DOUBLE TRACK
- RAILROAD SINGLE TRACK
- W/C UNDER CONSTRUCTION

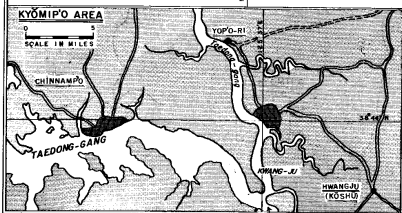
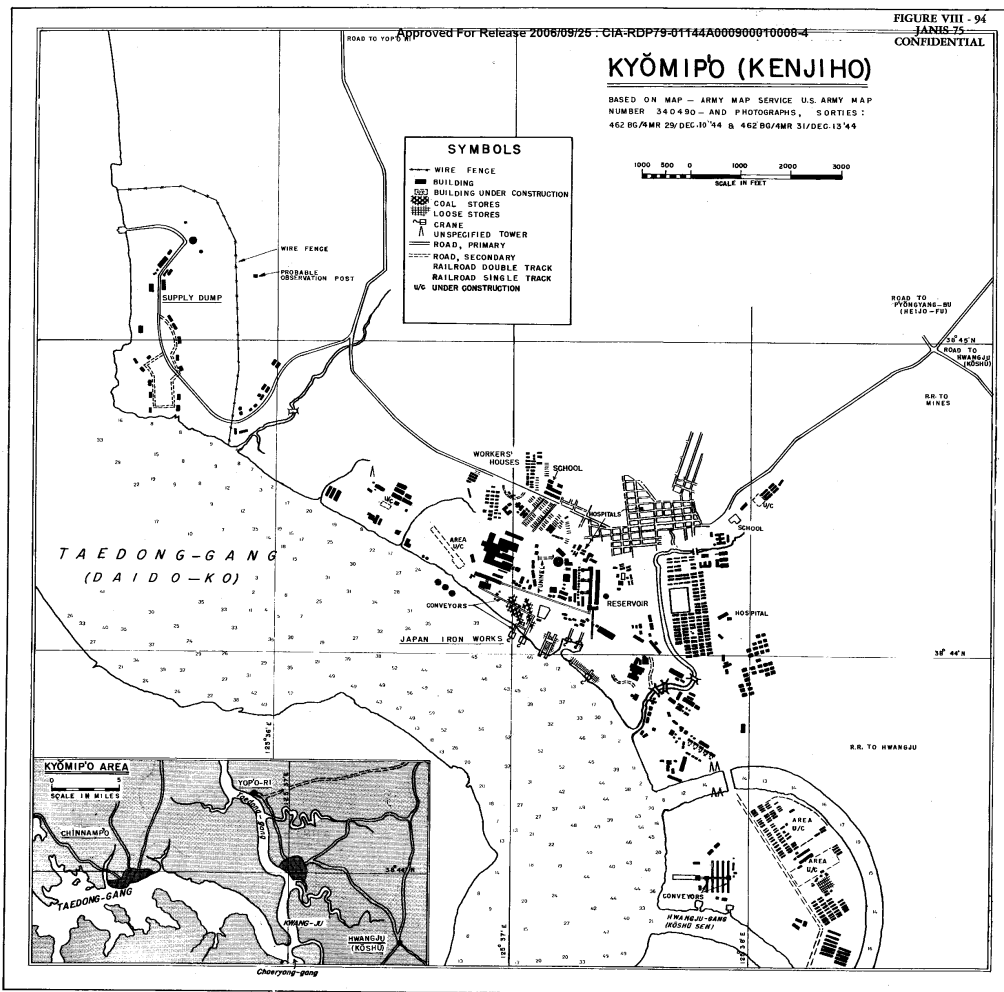
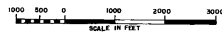


FIGURE VIII - 94. *Kyŏmpiŏ*.
Plan of port and town. Encircled numbers refer to port facilities
described in Chapter VI.

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CITIES AND TOWNS

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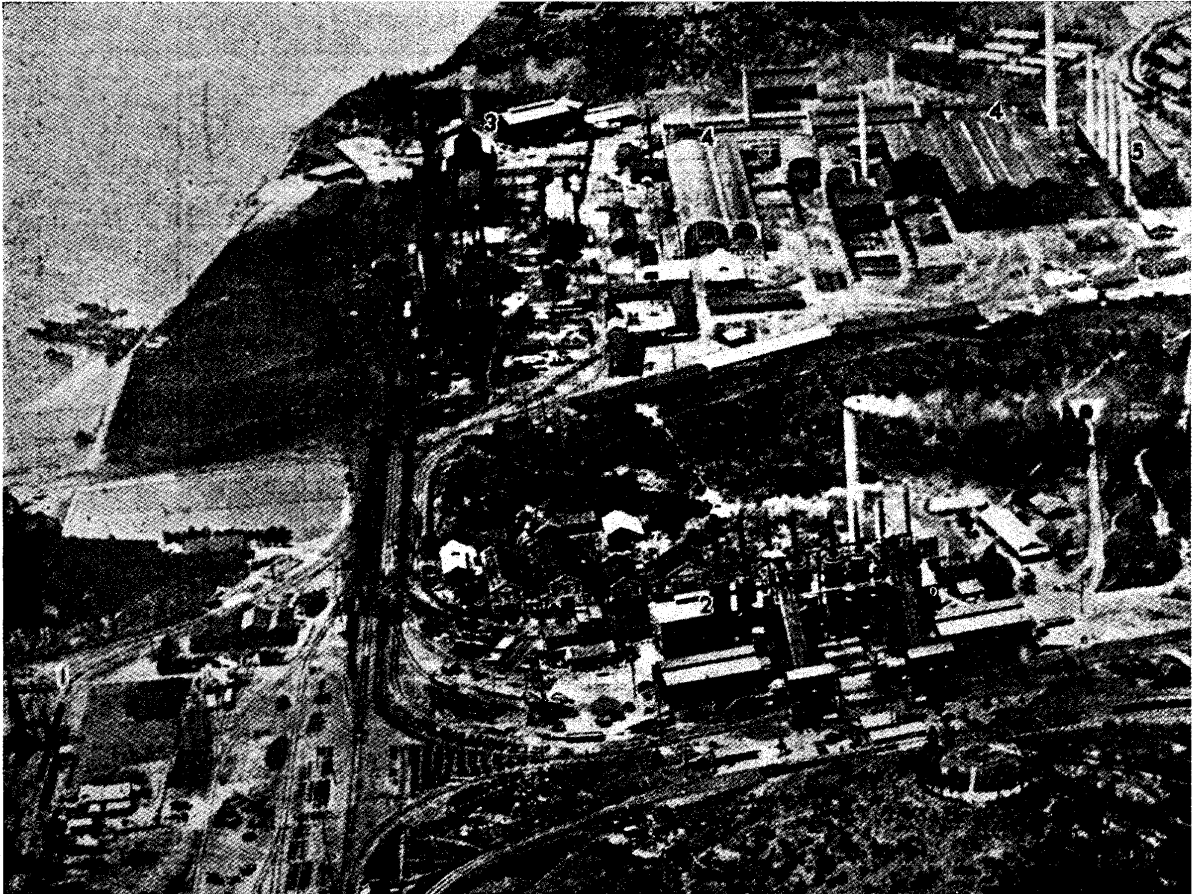


FIGURE VIII - 95. *Kyomip'o.*
Japan Iron Works (Nippon Seitetsu K. K.). Looking WNW.
1. Bridge cranes. 4. Rolling mills.
2. Blast furnaces. 5. Open hearth furnaces.
3. Coke and by-products plant.

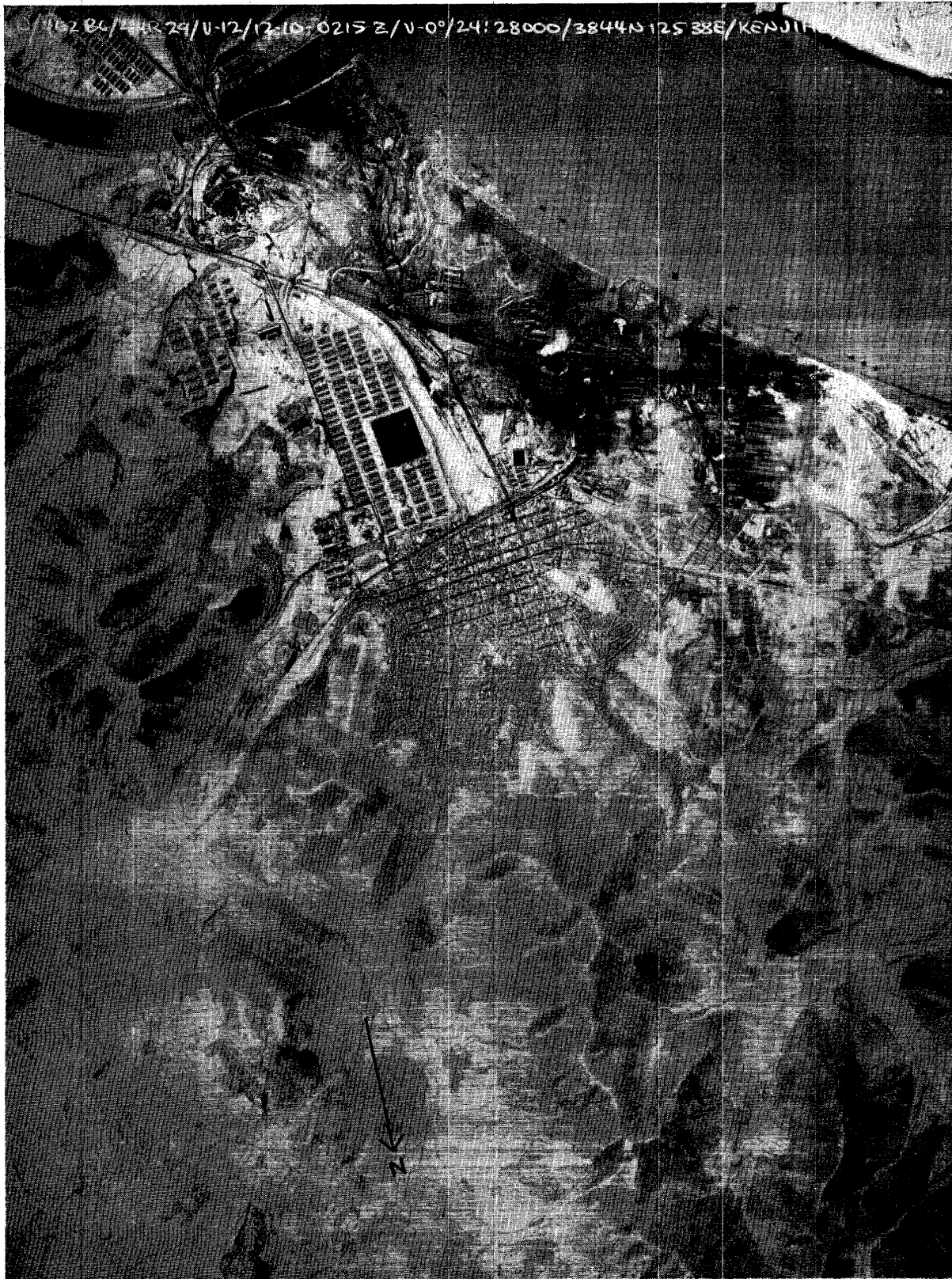


FIGURE VIII - 96. *Kyomip'o*.
Airview of city and Japan Iron Works. December 1944.

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FIGURE VIII - 97
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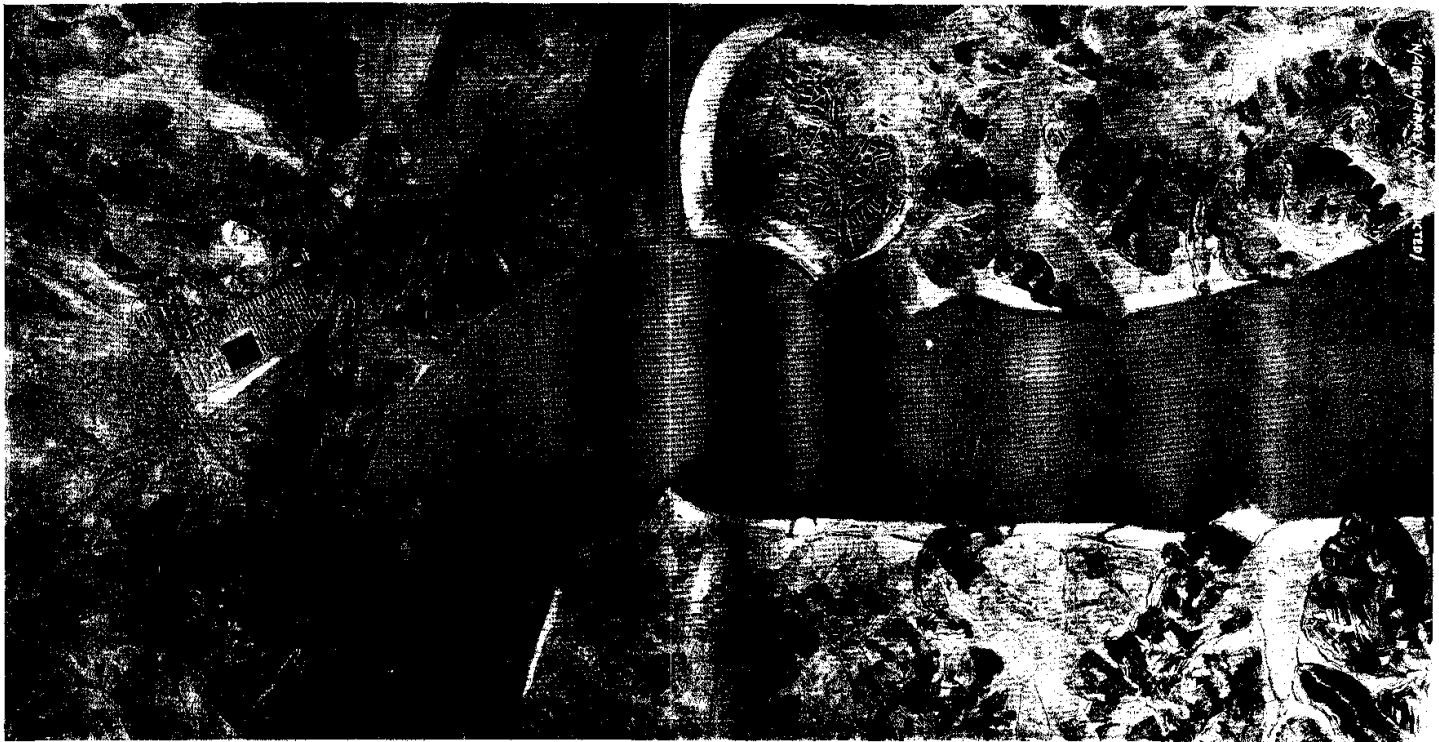


FIGURE VIII - 97, Kyushu, Japan
Aerial view of city and Japan Iron Works, December 1941

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Other factories in Chinnamp'o include rice mills, a flour mill, a brick plant, a cotton mill, kilns, and many small home industries producing pottery and small machine parts. An arsenal manufacturing small arms and light artillery has been reported in the eastern part of the city.

(5) Warehouses and storage.

The coal depot is east of the basin on the waterfront. Two 6,000-ton colliers can be loaded at the depot. Directly north of it is the naval fuel storage area, which is reported to have had 100,000 tons of oil stored above ground in 1941. The P'yongyang Mining Company's coal yards are west of the coal depot.

The Nippon and Rising Sun Oil Companies have warehouses north of the Chinnamp'o railroad station.

One Standard Vacuum Company warehouse is on the waterfront 1/2 mile east of the Chōsen Riken Metals Company; another is on the west bank of the Hup'o-ch'on.

There are numerous import and export warehouses of wood and corrugated-iron construction around the basin.

(6) Billeting facilities.

An industrial school and other smaller schools afford limited billeting facilities.

(7) Health and sanitation facilities.

(a) Hospitals and medical personnel. There are 3 hospitals in Chinnamp'o. The government provincial hospital has an operating room and an estimated bed capacity of 62.

(b) Sewage disposal. Sewage is diluted before it is discharged into the river. The sewage trunk line had an estimated length of 4.3 miles in 1939.

(8) Buildings.

There are 2 post offices, 4 police stations, and several customs offices in the city. The Chamber of Commerce, Bank of Chōsen, Foreign Government Building, and the Weather Bureau are all within a block of the City Hall.

The P'yongyang Prison and a reformatory school are on the northwest outskirts of the city.

(9) Internal transportation.

The Poktu-p'o (Bokutō-ho) ferry across the Taedong-gang runs from Handup'o (Kantō-ho) to Poktu-p'o on Mangdalligi (Bōtatsuri-saki).

(10) Public utilities.

(a) Water. The Chinnamp'o waterworks served 48.8% of the population in 1937; the average daily supply was 472,000 gallons. The reservoir is 1/4 mile west of the city hall.

(b) Power. Chinnamp'o receives its electric power by transmission lines from the North Korean grid.

(c) Communications. Telephone and telegraph lines run to P'yongyang, where they join the main Korean systems.

Until 1941, the Chinnamp'o radio-telegraph station provided ship-to-shore and public communication service; the station's 2 towers are on Myonghyop-san (Meikyō-san), in the southwest part of the city.

(11) Repair and service facilities.

The Chung-ch'on Iron Works and the Chōsen Shoko Corporation undoubtedly have repair facilities in their shops, as do the Japan Mining Company, the Chōsen Riken Metals Company, and the Chōsen Nissoon Chemical Industry Company.

H. Kyomip'o (Kenjiho; 1939 estimated population: 25,000).

Kyomip'o, on the east bank of the Taedong-gang (Daidō-kō) 19 miles south-southwest of P'yongyang (Heijō), is the site of the Japan Iron Works (Nippon Seitetsu K.K.), one of the major heavy industry plants in Korea (FIGURE VIII - 94). In 1942 the factory produced an estimated 400,000 metric tons of pig iron and an estimated 100,000 metric tons of steel (nearly 40% of the total Korean steel production). Ordnance is produced, and ammonium sulphate and sulphuric acid are by-products from the coke ovens.

The plant stretches 3/4 mile along the waterfront (FIGURES VIII - 95 and VIII - 96). A small basin for lighters is equipped with mechanical coal handlers. Kyomip'o can be reached from the Yellow Sea except from late December to mid-March, when the Taedong-gang is frozen. A 3'6"-gauge, single-track line runs 6 miles southeast to the Pusan - Kyongsong - Mukden main line. Spurs from this line lead northeast to the iron mines which supply the plant, and to a brick plant and a coal brick plant southeast of the Japan Iron Works. A main highway runs southeast to Hwangju (Kōshū). An emergency landing field was reported at Kyomip'o in 1943.

A large factory, which had 3,000 employees in 1942, has been reported northeast of Kyomip'o. It is believed to be turning out aircraft parts from products of the Chōsen Riken Metals Company at Chinnamp'o.

The portion of the city not directly concerned with the Japan Iron Works covers an area to the northeast approximately 3/4 mile square (FIGURE VIII - 97). It has telephone and telegraph connections with the main Korean system. Water is supplied from a reservoir on a hill directly east of the Japan Iron Works. The factory steam plant, with an installed capacity of over 1,000 kilowatts, supplies the city. Three hospitals, 2 police stations, and a post office serve the area. Two schools offer limited billeting facilities.

83. Northwest Korea

A. Introduction.

The northwestern province of P'yongan-pukto (North Heian) is a frontier-like area of prevailingly mountainous terrain, intense winter cold, and a sparse agricultural population. Most of the population occupies a coastal strip served by the double-track Pusan - Kyongsong - Mukden railroad; Sinuiju, the only city, and Chongju, the largest town, are both on this railroad. Inland centers are chiefly mining towns and frontier posts on the Amnok-kang.

Lumbering and mining are the well-established industries; some rice and other grains are grown near the coast. Extensive hydroelectric developments on the Amnok-kang (Oryoku-kō; Yalu River) and easy access to southern Manchuria have occasioned the growth of war industries, especially in the An-tung - Sinuiju area.

B. Sinuiju (Shingishū; 1940 population: 61,143).

(1) Importance.

Sinuiju (FIGURE VIII - 98) is the largest city and capital of P'yongan-pukto (North Heian). It is 100 miles northwest of P'yongyang (Heijō) and is separated from An-tung, Manchuria, by the Amnok-kang (Oryoku-kō or Yalu River). The 2 cities form an urban complex which is a major lumber and paper center and shipping point on the Pusan - Kyongsong - Mukden main line. War industries, principally metallurgical and chemical, have expanded rapidly in recent years, and the population increased 20% between 1937 and 1940.

(2) Means of access.

(a) *Water.* The Amnok-kang has a depth of 9 feet at the piers and is navigable for 2,000- to 3,000-ton steel barges and for freighters of 1,500 tons. Deep-water port installations at Dasado (Tashitō), 20 miles south, have rail connections with Sinuiju via Yongamp'o (Ryūgampo or Ryūsen).

(b) *Rail.* The Pusan - Kyongsong - Mukden main line extends southeast to P'yongyang and Kyongsong (Keijō) and to Mukden, 130 miles northwest.

(c) *Road.* Sinuiju is the frontier terminus of the main road from Kyongsong and P'yongyang. Other roads lead south to Yongamp'o and Dasado (Tashitō), and to upstream points on the Amnok-kang. Manchurian highways lead north and west from An-tung to Mukden and Dairen.

(d) *Air.* The Sinuiju landing field lies just south of the city. The An-tung airfield is across the river, 6 miles south of An-tung. A large landing field was reported just south of Yongamp'o in 1943.

(3) Physical characteristics (FIGURE II - 76).

Sinuiju, on the left bank of Amnok-kang 20 miles above its mouth, is a rapidly expanding city directly across the river from An-tung. The river occupies a broad, island-studded channel for several miles above the city, but follows a straight course about 800 yards wide between An-tung and Sinuiju. The cities are connected by the old railroad bridge, bordered by footwalks barely wide enough for one-way motor traffic, and by a new railroad bridge, probably double-tracked. Ferry service is provided by junks.

The old portion of the city has a roughly triangular shape bounded by the railroad, the river, and a moat-like drainage ditch. Most of the industries are along the river front and are served by both railroad sidings and river transportation. The flood plain immediately around the city is interspersed with drainage ditches and small lakes. The commercial section is along the main artery which parallels the river.

(4) Factories.

Recent industrial development, most of it south of the city, includes the following:

Chōsen Anhydrous Alcohol Company, reported to make alcohol from sawdust and to have 7 floors below and 9 stories above ground level.
Toyo Light Metal Corporation (aluminum).
Kokusan Light Metals Industrial Company, east of Yongamp'o (aluminum).
Sansei Mining Company Smelter at Yongamp'o.
Oriental Special Casting Company (chilled bores).
A magnesium plant, possibly the Japan Salt Industrial Company.
A reported steel works at Dasado.
Oriental Development Company (ethyl alcohol).
Manchurian-Korean Dyestuffs Company (dye bases and explosives); may have only a warehouse in Sinuiju.
Spinning and weaving mill on the southern edge of the city was scheduled to begin operations in 1938.

The older industries are the large Chōsen Paper mill a mile north of the railway station, several lumber mills, a lead smelter east of the custom houses, and small rice mills.

(5) Warehouses and storage facilities.

The principal warehouses are on the right (An-tung) bank of the river. Those on the Korean side are near the custom house, at the deep water port of Dasado (Tashitō), or are associated with the major industries. There are oil storage facilities in the old city.

(6) Billeting facilities.

The old city is the site of a military post and barracks (FIGURES VIII - 98 and VIII - 99). Large Japanese military barracks, complete with administration buildings and hospital, are in the new (Japanese) city nearer the coast, and there are large barracks at Uiju (Gishū), 10 miles upstream. The provincial government building, 2 high schools, and a commercial school can be converted into barracks. There are workers' barracks associated with the Chōsen Paper Mill.

(7) Health and sanitation.

There is a military hospital in the Japanese city. A well-equipped provincial government hospital, housed in a frame building, has 100 beds. A smaller private hospital has 30 American and 20 Korean beds. The large An-tung hospital and a garrison hospital are located at An-tung. The sewerage system consists of 1.9 miles of sewage truck lines which drain into the Amnok-kang.

(8) Buildings.

One- or 1½-story brick buildings with tile roofs predominate (FIGURE VIII - 100). The station, provincial government building, city hall, and a few of the principal business houses are 2 or 3 stories high.

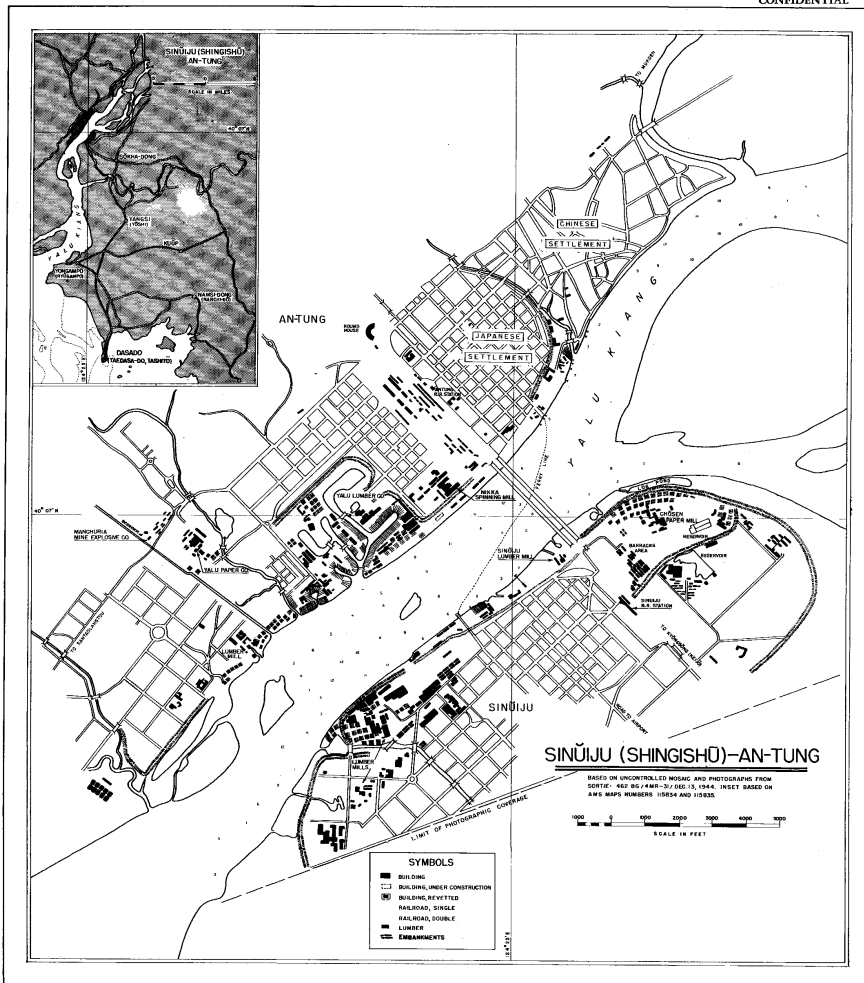


FIGURE VIII - 98. Sinüju.
 Plan of city and port. Encircled numbers are in feet.
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CITIES AND TOWNS

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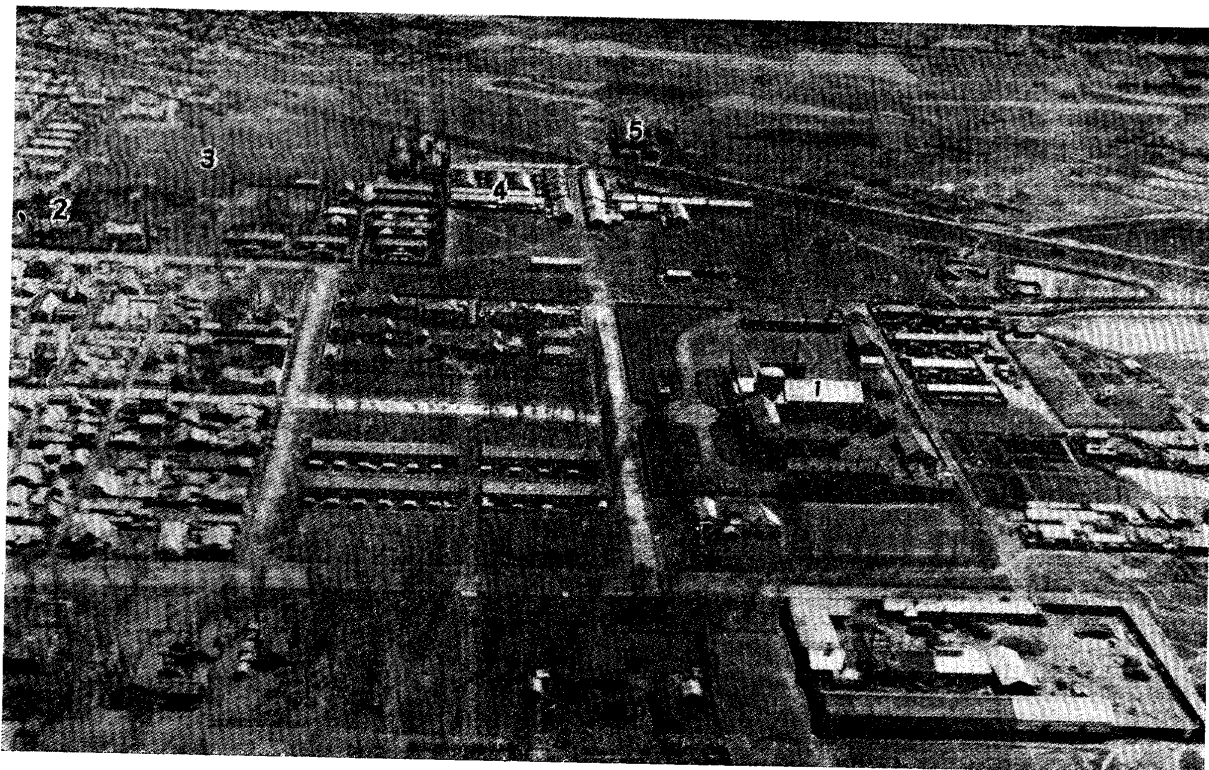


FIGURE VIII - 99. *Sinuiju*.
View of city. Looking SE. Before 1931.

- | | |
|-------------------------------------|----------------------------|
| 1. Prefectural office. | 4. Department of Forestry. |
| 2. Old military garrison buildings. | 5. Middle school. |
| 3. Drill field. | |



FIGURE VIII - 100. *Sinuiju*.
Airview of city and Amnok-kang. Looking NW. Before 1931.

- | | | |
|------------|-----------------|---|
| 1. Prison. | 3. Post office. | 5. Lumber mill. |
| 2. School. | 4. City hall. | 6. Old railroad bridge over Amnok-kang. |

(9) Public utilities.

(a) *Water.* The reservoir of the water system is either supplied by or supplemented by 166 dug wells. The system supplies 4,580 households.

(b) *Electricity.* Most electric power in this section of Korea is supplied by the hydroelectric plants on the Ammok-Kang. A plant was completed at Sup'ung-dung (Suihō-dō) in 1942, and one at Uiju, 10 miles upstream, is scheduled to begin production in 1945. The Chōsen Paper Mill has a private plant, and the An-tung steam plant lies directly across the river. There are 2 electric generating stations in the old city.

(c) *Gas.* Sinuiju gets gas by pipe line from An-tung.

(d) *Fire-fighting.* Except for 1 or 2 motorized units mounted on American truck chassis, all fire-fighting equipment is manually operated.

(10) Repair and service facilities.

(a) *Marine.* There are building and repair facilities for native junks and small launches on the bank of the river; these include a well-equipped machine shop.

(b) *Railroad.* A large roundhouse and the main repair shops in the vicinity are in An-tung. The Sinuiju rail yards have a small roundhouse, locomotive shed, and car repair shops.

(c) *Motor.* A bus line operated a large garage which was used to build bus bodies, manufacture some parts, and overhaul motors. There were also smaller garages and repair shops.

C. Chongju (Teishū; 1937 population: 12,502).

Chongju (FIGURE VIII - 129) is a rice center and railroad junction about midway between Sinuiju (Shingishū), on the Manchurian border, and P'yongyang (Heijō); its railroad shops are reported to be the most important in northwestern Korea. Small flat-bottomed boats, which carry five or six passengers and freight, ascend a shallow river to a dam about 1½ miles below the town. Chongjin is on the Pusan - Kyongsang - Mukden railroad, 55 miles northwest of P'yongyang and 55 miles southeast of An-tung, Manchuria. A second line leads 55 miles north to Sakchu (Sakushū) and to the site of the Suiho-do dam and power plant on the Amnok-kang (Oryoku-kō or Yalu River). The P'yongyang - Sinuiju highway passes just outside the corporate limits. An earthen road with a crushed stone base extends south to the coast and to Kusong (Kijō), 20 miles north.

The town is 4 miles from Talch'on-gang (Tatsusen-kō) (inlet), a shallow indentation of Sojoson-man (Nishi-Chōsen-wan), and just above the confluence of 2 minor streams. The Korean town covers a series of low hills at the edge of the valley and is separated from the railroad station and shops to the south by a small Japanese settlement of railroad personnel and their families. The main thoroughfare is a north-south street which is the shopping district. It is fed from the east by small alleys and narrow side streets, but is separated from the adjacent rice paddies by a single row of buildings on the west side of the street. Most of the public buildings are on the northern outskirts of the community. Perishable goods were stored in one or two godowns near the station, and all non-perishable commodities in an open area northeast of the station.

General facilities are limited. The only potential billeting facilities are the police station in the Japanese section of the town, a few small Korean and Japanese inns, and a primary

school which occupies a spreading 1-story building on the northern outskirts. There are a few Korean and Japanese dispensaries, and a mission hospital with 20 beds; the railroad operated its own dispensary in the station area. The city has about 40 telephones installed at the station and in inns, business houses, and the residences of a few ranking Japanese railroad officials. There are telegraph offices at the railroad station and at the post office. Municipal fire equipment consists of hand pumps manned by volunteers. The railroad had its own telephone system and fire equipment.

The Chongju railroad workshops, a short distance south of town, are reported to be the most important railway shops in northwestern Korea. The machine shop and roundhouse employed over 150 men in 1935. Major repairs were possible, but there was no construction of new equipment.

84. Northeast Korea**A. Introduction.**

The 2 northeastern provinces of Hamgyong-namdo (South Kankyō) and Hamgyong-pukto (North Kankyō) have been greatly developed by the Japanese in recent years. The climate and terrain are generally unfavorable for agriculture, but commercial and industrial growth has been rapid. The North Korean ports handle a large transit trade between Japan and central Manchuria, and available hydroelectric power and mineral resources have given impetus to the development of new industries. A considerable military establishment is maintained near the Russian frontier, and other units police the Manchurian border. The population is concentrated in a group of small coastal plains and the valley of the Tuman-gang (Tōman-kō). The population of Ch'ongjin (Seishin), the largest city, increased almost 200% between 1937 and 1940; several other cities have shown rapid population increases.

B. Wonsan (Genzan; 1940 population: 79,320).**(1) Importance.**

Wonsan, on Yonghung-man (Eikō-wan; bay) is the east coast terminus of the easiest route across the peninsula (FIGURE VIII - 129). It is the center of petroleum refining in Korea, a road and rail hub, and a port and naval base.

(2) Means of access.

(a) *Water.* It is a regular port of call for ships from western Japan and northern Korea.

(b) *Rail.* The single-track line from Ch'ongjin (Seishin) and central Manchuria on the north to Kyongsong (Keijō) on the south passes through Wonsan. Some distance northwest of the city, it joins a single-track line from P'yongyang (Heijō) to the west, and a short distance southeast of Wonsan, it joins a single-track line from Samch'ok (Sanchoku).

(c) *Road.* Main roads extend northeast to Ch'ongjin, west to P'yongyang, and south to Kyongsong. The road along the coast from the southeast is a secondary road except for the northern section from Hupkok (Kyūkoku), a military base, to Wonsan.

(d) *Air.* A military airfield is reported under construction about 6 miles northwest of Wonsan. The Wonsan naval air base with runways and dispersal areas is on Kalma (Katsuma)



FIGURE VIII - 101. Wonsan.

Airview of city and adjacent naval air base. December 1944.

1. Principal port area.
2. Northern unit of city.
3. Southern unit of city.
4. Chosen Oil Refinery and Standard Vacuum Oil Co.
5. Naval air base.

peninsula, on the east side of Wonsan-hang (FIGURE VIII - 101).

(3) Physical characteristics.

(a) *Relation to surface features.* Wonsan lies on the narrow coastal plain along the southwest side of Wonsan-hang (south part of Yonghung-man). A series of hills 250 to 450 feet high rise abruptly behind the city. (PLAN 45 and FIGURE VI - 21).

(b) *Shape and dimensions.* Wonsan is made up of 2 approximately equal units connected by a narrow populated strip about 1 mile long (FIGURE VIII - 101). The 3 parts have a total length of about 2 miles. The northern unit, north of the Chokchon-ch'on (river), is irregularly shaped. The crescent-

shaped southern unit is about $\frac{3}{4}$ mile long and $\frac{1}{4}$ mile wide at the center. It has a small valley development at the west end.

(c) *Degree of compactness and chief open spaces.* Both units are compact with few open spaces. The chief open space is between the 2 units around the railroad yards and waterfront.

(d) *Street plan.* The northern unit has broad, straight streets; some are oriented at right angles to the wharves, and others at an acute angle to them. The southern unit has a rectangular street pattern along the waterfront. This pattern has been superimposed on the old irregular pattern behind the waterfront (FIGURE VIII - 101).

(e) *Differentiated sections.* The chief commercial section is in the northern unit; a secondary center is in the southern unit. Public buildings, except for the schools, are concentrated in the

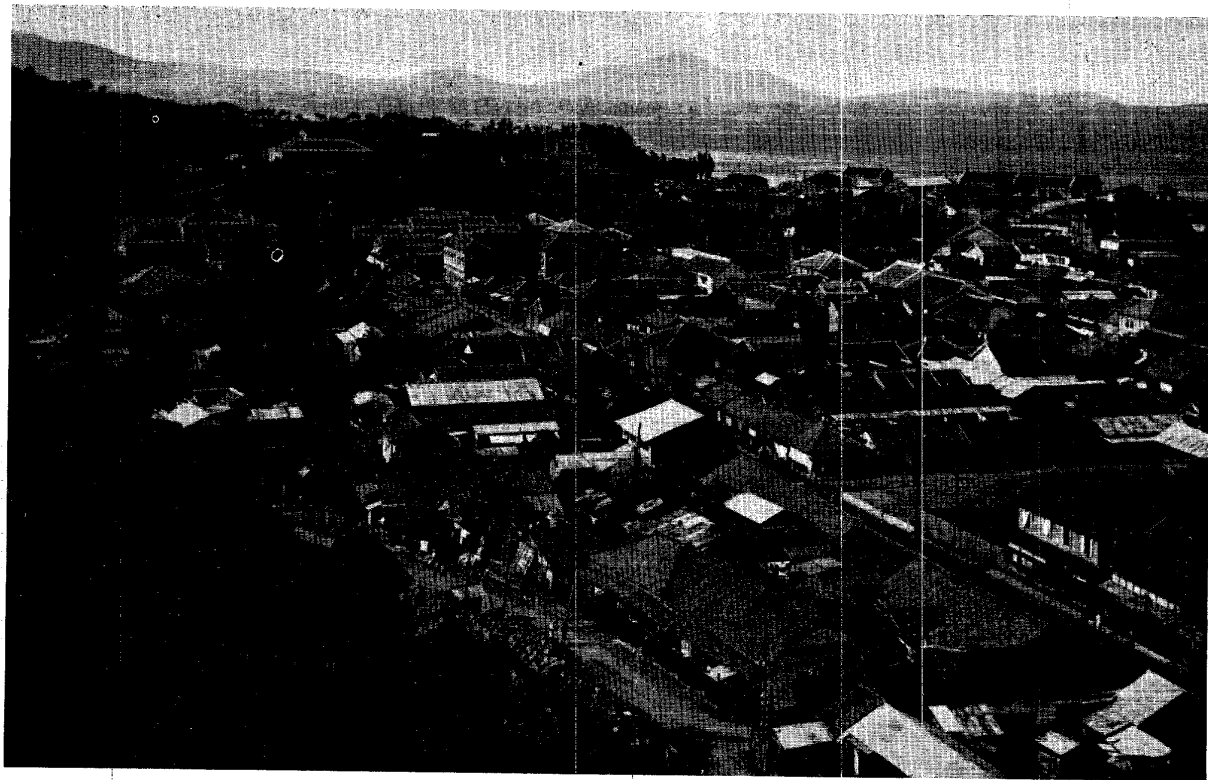


FIGURE VIII - 102. Wonsan.

Japanese residential area in northern part of city. Port and Yonghung-man in right background. Looking N.

northern half of the northern unit. The principal port facilities are along the northeastern side of the northern unit. Additional facilities are available at the Chōsen Oil Refinery east of the southern unit, and at the Rising Sun Oil Company, about 6 miles northwest of the city. There are small factories on both sides of the Chokchon-ch'on. The main Japanese residential section is in the western part of the northern unit (FIGURE VIII - 102), while the Korean residential area is in the southern unit (FIGURE VIII - 103).

(4) Factories.

A new industrial plant is under construction a short distance southeast of the southern unit (FIGURE VIII - 104). The Chōsen Oil Refinery and Standard-Vacuum Oil Company are east of the southern unit (FIGURE VIII - 101). The Rising Sun Petroleum Company and the Sumitomo copper smelter are about 6 miles northwest of the city. Minor industries include lime kilns and a flour mill on Chokchon-ch'on. There is also an aluminum plant.

(5) Warehouses and storage.

Several warehouses and sheds line the principal waterfront. Additional warehouses with a total capacity of 500,000 tons have been reported in this area. Several others are near the center of the southern unit and on the property of the Chōsen Oil Refinery and Standard-Vacuum Oil Company. In February 1945 the Chōsen refinery had 13 tanks with a total capacity of 865,000 barrels in the tank farm area and 217 small tanks with a total capacity of 295,000 barrels in the refinery area. The Rising Sun Petroleum Company had at least 12 tanks and some

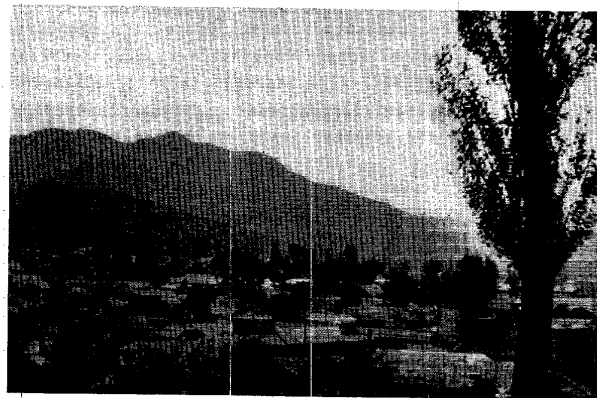


FIGURE VIII - 103. Wonsan.

Korean residential area in southern unit of city. Probably looking NW.

warehouse space. Additional oil storage was reported at Tunamni, east of the Chōsen refinery.

(6) Billeting facilities.

A large number of small buildings, reported to accommodate 20,000 naval personnel, have been built about 1 mile southeast of the city. Other facilities are 2 commercial schools, a high school, and 14 other schools, several Japanese hotels, and a large number of Korean inns.

(7) Health and sanitation.

(a) Hospitals and medical personnel. Wonsan has 3 hospitals. One is a 75-bed mission hospital and one a 100-bed mu-

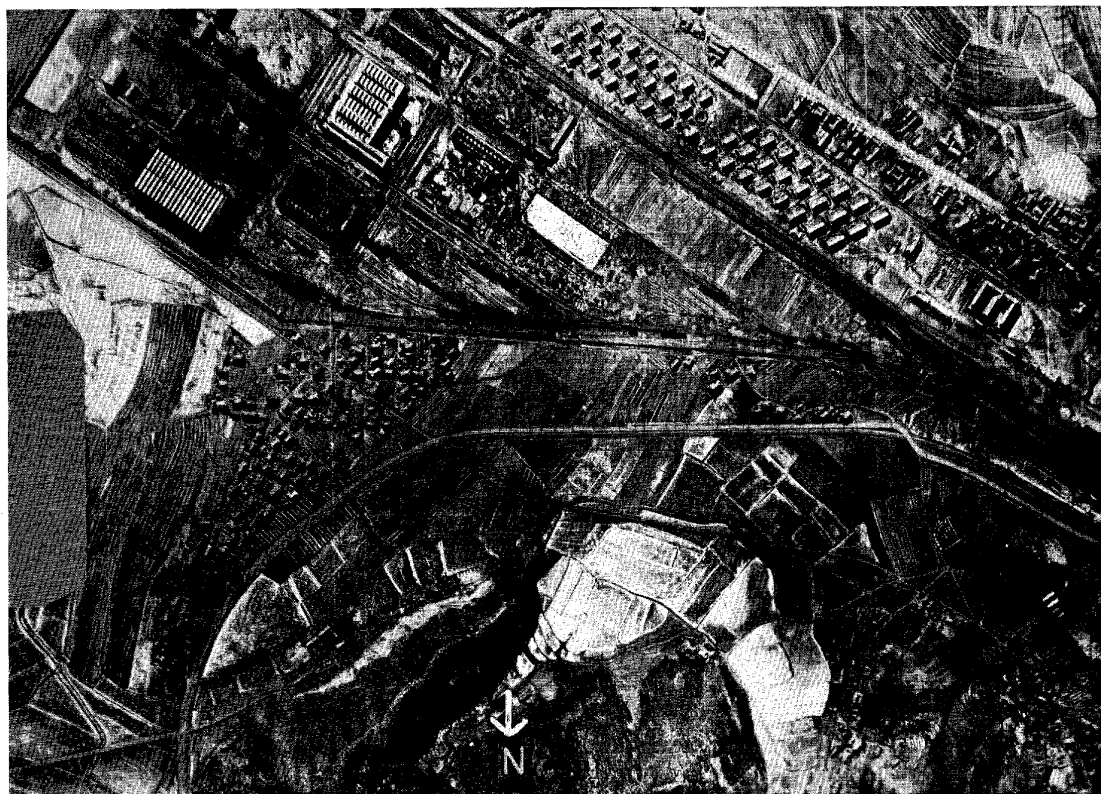


FIGURE VIII - 104. *Wonsan.*
New industrial plant under construction SE of city. March 1944.

nicipal hospital; both of these have operating rooms and X-ray equipment. A private Japanese hospital has X-ray equipment and a capacity of 40 beds; there are also an isolation hospital, a tuberculosis sanitarium, and a clinic.

(b) *Sewage disposal.* A sewer trunk line 1.2 miles long discharges into the ocean.

(8) *Internal transportation.*

Small busses run from the east end of the southern unit to the Chōngmyō-sa (Chōmyō-ji; shrine) in the northern unit.

(9) *Public utilities.*

(a) *Water.* The river was the chief source of supply, supplemented by water from 155 dug wells. The intake for the waterworks was about 7 miles upstream from the city. The waterworks had 2 settling basins, 4 filter beds, and 1 pure water reservoir, and supplied 718,000 gallons per day. Forty-nine percent of the population was supplied by this plant. (All water information is based on 1936 figures).

(b) *Power.* Wonsan is on the northern Korean grid. The electric company office is in the southwestern corner of the northern unit between the railroad and the Chokchon-ch'on. There is a steam plant with an estimated installed capacity of 1,200 kilowatts. It is probably only a standby plant.

(c) *Ice.* There is reported to be an ice plant in Wonsan.

(d) *Communications.* A submarine telegraph cable runs to Japan by way of Ullung-do (Utsuryō-tō), an island off the central east coast. Wonsan has point-to-point radiotelegraph service with land stations.

(e) *Fire-fighting.* Wonsan has several motorized units, but most of its fire-fighting equipment is hand-operated. There are about 205 fire hydrants.

(10) *Repair and service facilities.*

(a) *Marine.* A shipyard at the northern end of the port area in the northern unit undertakes minor ship repairs, and has a drydock for small vessels.

(b) *Railroad.* The railroad workshops are near the Wonsan station south of the Kujokchon-ch'on.

(c) *Garages.* There are several garages.

C. Hamhung (Kankō; 1940 population: 75,320).

(1) *Importance.*

Hamhung, a short distance inland from Hungnam (Kōnan), is a military center and the provincial capital of Hamgyongnamdo (South Kankyō) (FIGURE VIII - 129).

(2) *Means of access.*

(a) *Rail.* Hamhung is on the main east coast line from Songjin (Jōshin) and other North Korean points to Wonsan (Genzan) on the south. A section of this line and a light railway as well connect the city with Hungnam, 7 miles southeast; the latter continues to the reservoirs on the north.

(b) *Road.* The main coast road enters Hamhung on the northeast and runs south to Wonsan. Another highway extends southeast to Hungnam.

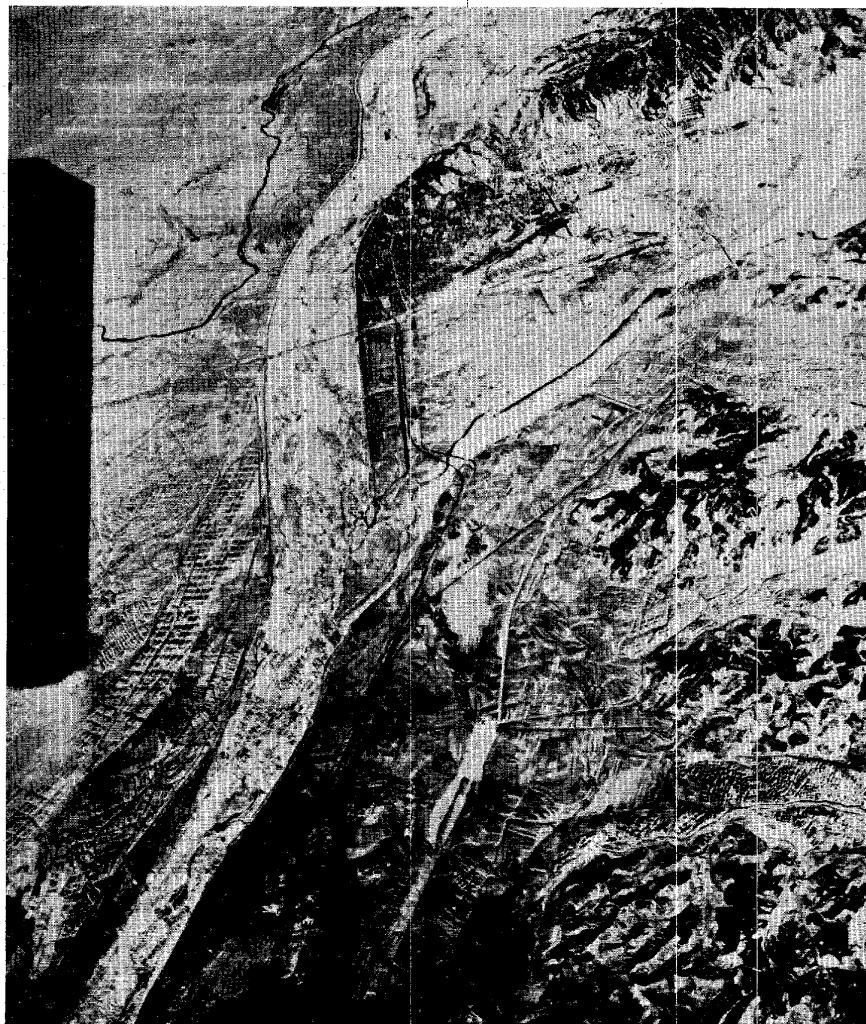


FIGURE VIII - 105. *Hamhung.*

Oblique aerial view of city and Songch'on-gang (river). Looking NW. 1944. Main railway and light railway from Hamhung to Hungnam in lower part of picture; northern extension of Motomiya industrial area in immediate foreground.

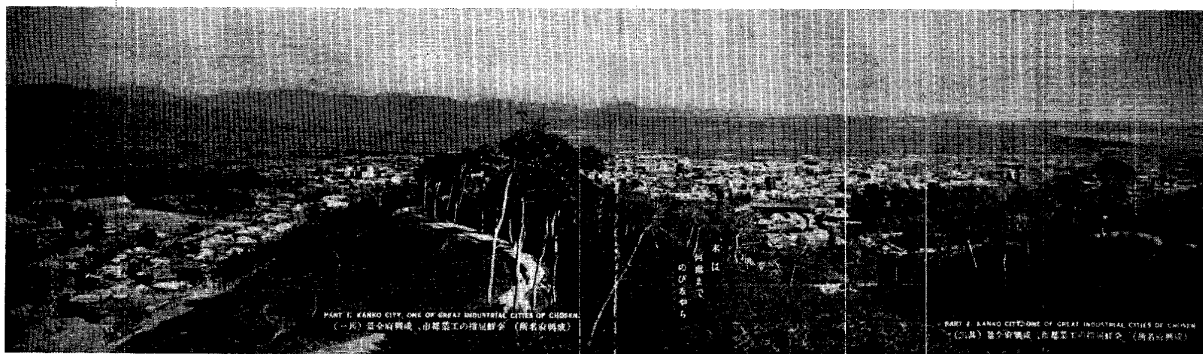


FIGURE VIII - 106. *Hamhung.*

Panorama overlooking city from hills behind it; Songch'on-gang in right background. Looking E.

(c) *Air.* The Kankō West landing ground is 1¼ miles west of the city. There is an emergency landing ground near Pon'gung (Hongū), 2½ miles northwest of Hamhung on the road to Hungnam.

(3) *Physical characteristics.*

Hamhung lies on the left bank of the Songch'on-gang (Jōsen-kō) at the foot of hills which rise to 650 feet. The city is almost entirely on level ground, with some urban development extending into the valleys (PLAN 46).

It occupies a roughly triangular area bordered by the river to the southwest, hills to the northwest, and the railroad to the east. It extends 1¼ miles along the river and 2 miles northeastward to a large barracks area; the most closely built-up area is along the river. (FIGURES VIII - 105 and VIII - 106).

Main highways and other roads which enter the city converge near the center in a radial pattern. Elsewhere the street pattern is highly irregular.

Nearly all commercial, educational, and administrative activities are concentrated in the area nearest the river.

(4) *Factories.*

There is an industrial development along the rail line to Hungnam (FIGURE VIII - 105).

(5) *Warehouses and storage.*

There are military warehouses near the center of the city, commercial warehouses near the main Hamhung station, and an oil warehouse northeast of the station.

(6) *Billeting facilities.*

Barracks for an infantry regiment are at the northeast end of the city; other barracks are northwest of the railroad station.

Hamhung has 13 schools, including an agricultural school and 3 junior high schools.

There are several Japanese hotels and a large number of Korean inns.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* The hospitals of Hamhung include: 1, a 100-bed provincial hospital near the center of the city (operating room, X-ray); 2, a 100-bed Red Cross hospital; 3, a 60-bed mission hospital at the western end of the city (operating room, X-ray); and 4, a garrison hospital near the infantry barracks.

(b) *Sewage disposal.* In 1939 the city had 3.7 miles of trunk line which discharged into the river.

(8) *Public utilities.*

(a) *Water.* In 1937 Hamhung consumed 815,849 gallons of water daily. Water is obtained from the Songch'on-gang and from several wells. One filter plant and 1 pure water reservoir are in the hills behind the city (PLAN 46).

(b) *Power.* The transformer station is near the river at the southern end of the city. Large hydroelectric plants of the Pujon-gong (Fusen-kō) and Changjin-gang (Chōsen-kō) systems are on the headwaters of the Songch'on-gang north of Hamhung.

(c) *Ice.* An ice plant is reported at Hamhung.

(d) *Communications.* Hamhung has a 250-watt broadcasting station and radiotelephone and radiotelegraph, used chiefly by airplanes.

D. Hungnam (Kōnan; 1941 estimated population: 140,000).

(1) *Importance.*

Hungnam (FIGURE VIII - 129) is an important industrial center and port on the east coast of Korea, about 50 miles north of Wonsan (Genzan) and not far from Hamhung. The Chōsen Nitrogen Fertilizer Company (Chōsen Chisso Hiryo K.K.) dominates the life of the city; making use of extensive hydroelectric power from the nearby mountains, it produces a wide variety of chemicals and metals for military purposes.

(2) *Means of access.*

(a) *Water.* A modern, well-equipped pier can accommodate 3 vessels of up to 10,000 tons; other facilities exist and still others are under construction. Anchorage is available in the harbor (Chapter VI, 61). Nearly all traffic is for the industries located in Hungnam. (FIGURE VI - 15).

(b) *Rail.* Hungnam is on the main line between Ch'ongjin (Seishin) on the northeast and Wonsan on the south. A section of this line and a light railway lead to Hamhung (Kankō). Spurs serve the various industries.

(c) *Road.* A short main highway connects Hungnam with Hamhung, where it intersects the main highway northeast to Songjin (Jōshin) and Ch'ongjin and south to Wonsan.

(d) *Air.* A landing ground is 5 miles southwest; an emergency landing ground is near Pon'gung (Hongū), between Hungnam and Hamhung.

(3) *Physical characteristics.*

(a) *Relation to surface features.* Hungnam lies just east of the Songch'on-gang (Jōsen-kō; river) at the head of Sohojin-hang (Seikoshin-kō; bay). Northwest and west of the city are 3 parallel east-west rows of hills, which rise to more than 300 feet. North and east, a series of finger-like ridges point toward the bay. The urban development of Hungnam is built on the low-lying ground between the bay and the hills, with some development in the valleys west of the city. (PLAN 36).

(b) *Shape and dimensions.* Hungnam is made up of several separate urban units which form a chain around the head of Sohojin-hang (FIGURE VIII - 107). The over-all length of the urban units is approximately 4 miles. The greatest width is less than a mile.

(c) *Degree of compactness and chief open spaces.* The city on the whole is sparsely settled. All the units have compact, good-sized nuclei and nearly all of them have several open spaces. The unit northeast of the main plant has a playground and ball park.

(d) *Street plan.* The streets in the units northwest and southwest of the main plant have a rectangular pattern (FIGURES VIII - 108 and VIII - 109). In the other units, only small sections have regular patterns.

(e) *Differentiated sections.* The main factory of the chemical company with its adjacent workers' houses (FIGURE VIII - 108) forms the central unit in the city (FIGURE VIII - 110). The other units are mostly residential.

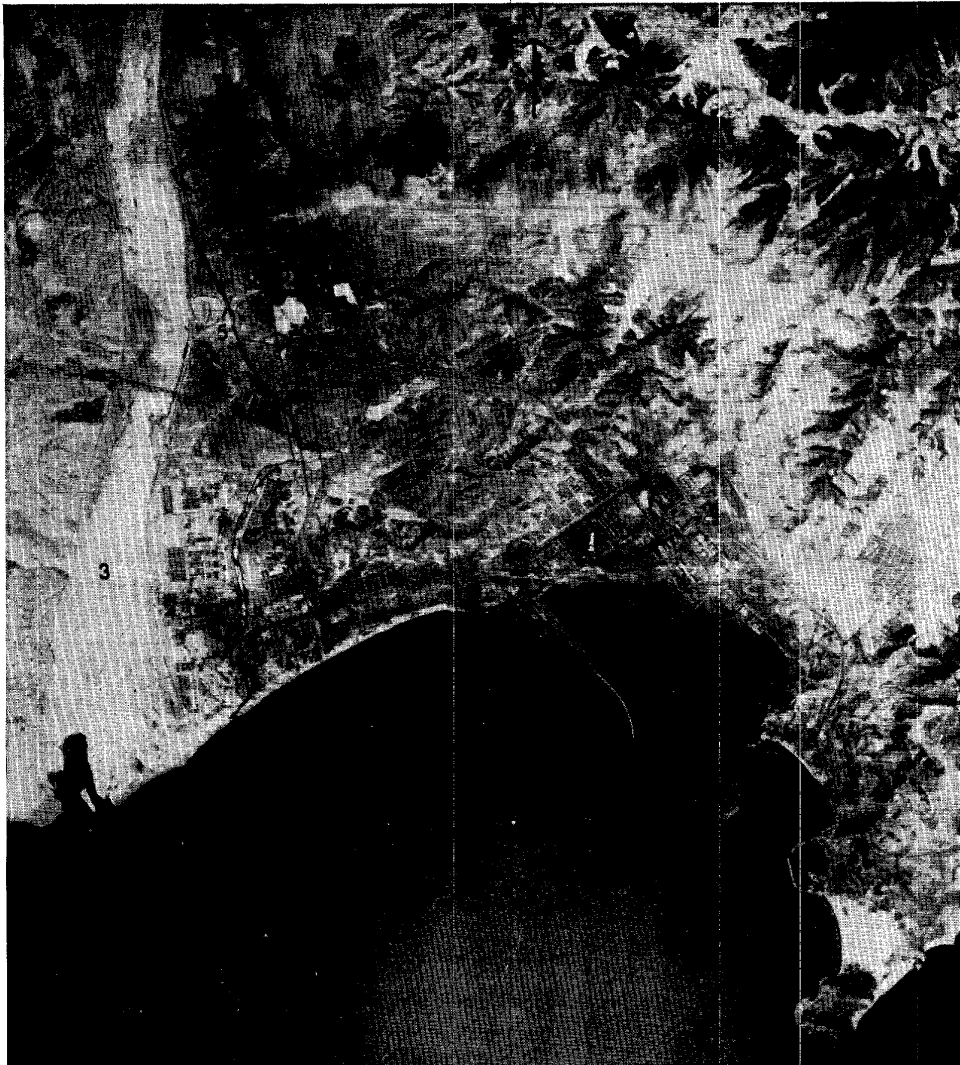


FIGURE VIII - 107. *Hungnam.*
Airview of city. December 1944.

- | | |
|---|--|
| 1. Chōsen Nitrogen Fertilizer Company (main plant). | 4. Chōsen Nitrogen Explosives Factory. |
| 2. Chōsen Nitrogen Fertilizer Company (Motomiya plant). | 5. Reservoir and pumping station. |
| 3. Songch'on-gang. | |



FIGURE VIII - 108. *Hungnam.*

Workers' houses NW of main factory. Looking W. Before 1935.

- 1. Company buildings.
- 2. Company office buildings.



FIGURE VIII - 109. *Hungnam.*

View of residential area in SW part of city. Looking SW. 1937.

- 1. Workers' houses.
- 2. Power plant.
- 3. Songch'on-gang.
- 4. Chōsen Nitrogen Explosives Factory.
- 5. Area built up since 1937.

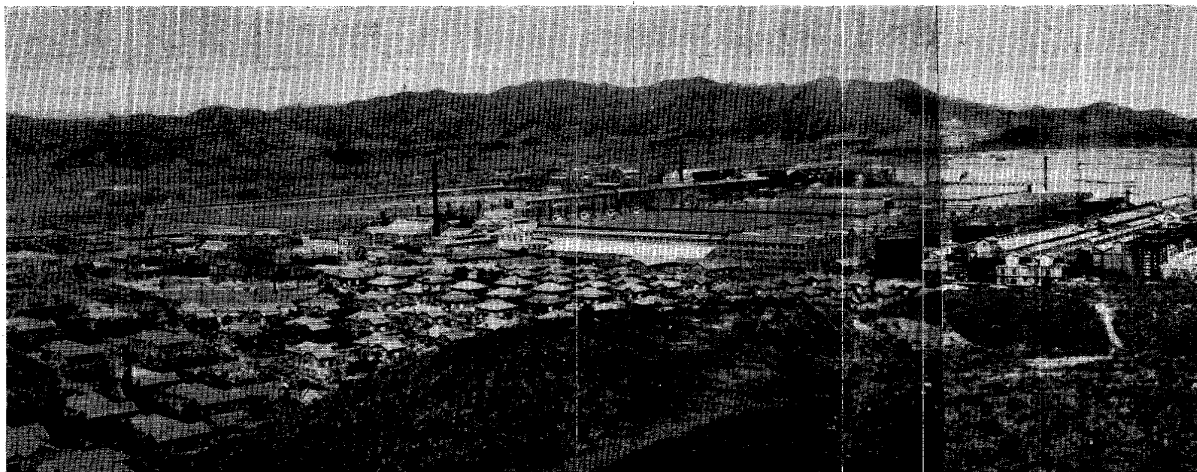


FIGURE VIII - 110. *Hungnam.*

Panorama of Chosen Nitrogen Fertilizer Company (main factory), with port facilities; Sohojin-man in center background. Looking generally SE. May 1935.

1. Company buildings.
2. Company offices.
3. Company hospital.

4. Mudokchon Auditorium.
5. Workers' houses.

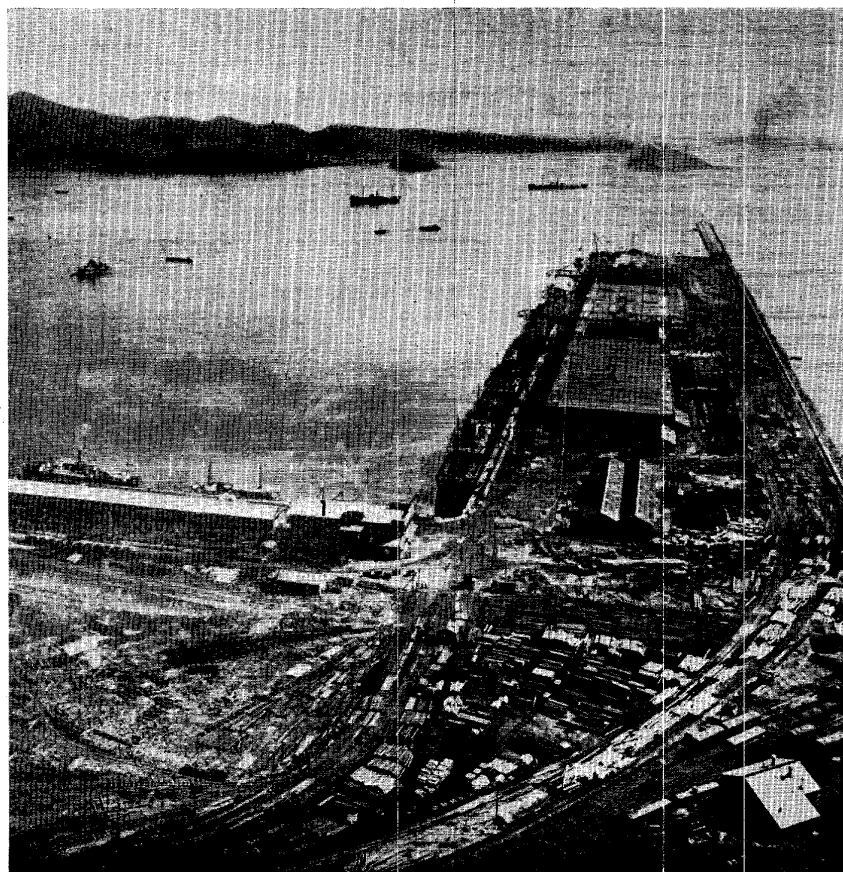


FIGURE VIII - 111. *Hungnam.*

General view of harbor and port facilities. Looking SE. 1. Harbor office. 2. Warehouses.

(4) Factories.

The principal factory of the Chōsen Nitrogen Fertilizer Company occupies several acres along the waterfront. Another large factory of the same company, the Motomiya Chemical plant, lies northwest of the city between the main rail line and the light railroad to Hamhung; additional industrial units are in the same area. Southwest of the city is the large Chōsen Nitrogen Explosives factory (Chōsen Chisso Kayaku K.K.) (FIGURE VIII - 107). Non-metallic products of these plants include explosives, several kinds of fertilizer, nitrogen, and electrolytic caustic soda. Metallic products include magnesium, aluminum and alumina, lead, copper, iron, and steel. Other plants produce ceramics, bricks, and rayon textiles.

(5) Warehouses and storage.

On or near the waterfront are about 600,000 square feet of warehouse space, served by railroads. The largest concentration, including 3 concrete transit sheds, is at Dock No. 1 and totals over 250,000 square feet (FIGURE VIII - 111). There are 4 tanks with a capacity of 30,000 barrels at the outer end of the dock. Within the principal factory are 16 hydrogen and nitrogen holders and at least 3 fish oil tanks; the explosives factory has several revetted storage areas. Open storage is available along the waterfront.

(6) Buildings.

Hungnam has 8 schools, 4 of which are grade schools (FIGURE VIII - 112). One hospital, operated by the company, has an estimated capacity of 60 beds, an operating room, and X-ray equipment (FIGURE VIII - 113). The Mudokchon Auditorium and the Hungnam Exhibition Hall are probably suitable for either billeting or storage space. There are several workers' housing developments.

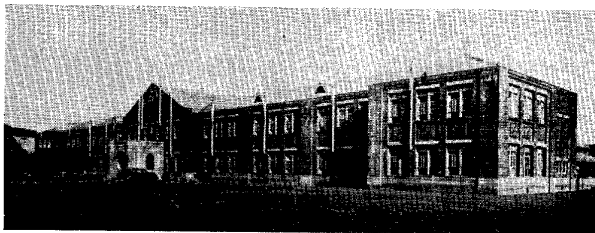


FIGURE VIII - 112. Hungnam.

Hungnam grade school in unit NE of main factory. Looking N. 1937.

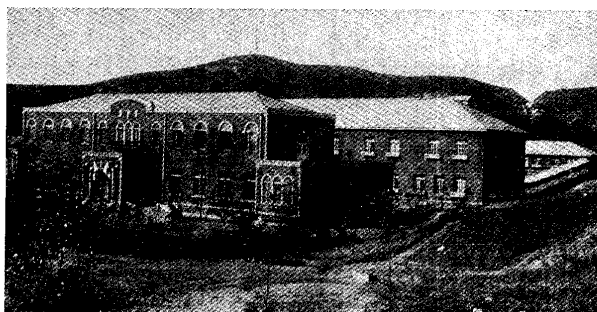


FIGURE VIII - 113. Hungnam.

Chōsen Nitrogen Fertilizer Company hospital. Looking W. Before 1935.

(7) Internal transportation.

The light railway to Hamhung serves the southwestern unit of the city.

(8) Public utilities.

(a) *Water.* A pumping station and reservoir on the Song-ch'on-gang are connected to the city by an underground conduit; halfway along the conduit is a second pumping station. The distribution reservoir is behind the workers' houses in the central unit (PLAN 36 and FIGURE VIII - 107). In 1938-1939 Hungnam used 720,000 gallons of water daily.

(b) *Power.* The principal source of electricity is the Pujon-gang (Fusen-kō; river) system of hydroelectric plants, about 35 miles north of Hungnam. Their total installed capacity is about 200,000 kilowatts. A steam plant, used only by the Chōsen Nitrogen Fertilizer Company, supplements the Pujon-gang power; in 1933 its installed capacity was 13,000 kilowatts. A transformer station is north of the hydrogen and oxygen electrolysis building in the main factory area.

E. Songjin (Jōshin; 1937 population: 23,496).**(1) Importance.**

Songjin is a small port and industrial center on the northeast coast of Korea about 85 miles south of Ch'ongjin (Seishin) (FIGURE VIII - 129). Formerly only a lumber port, it now ships crude magnesite ore and magnesia, and has magnesium and steel plants.

(2) Means of access.

(a) *Water.* Vessels of the Ōsaka Syōsen Kaisha and Chōsen Yusen Kaisha call several times a week. Vessels anchor off the southern end of the city; the main wharf, on the northern end of the Songjin Peninsula, can handle three 450-foot ships.

(b) *Rail.* The main east coast line connects Songjin with Ch'ongjin and central Manchuria, to the northeast, and with Hamhung (Kankō) and Wonsan (Genzan), to the south.

(c) *Road.* Main highways extend to Ch'ongjin and Unggi (Yūki) on the northeast and to Hamhung and Wonsan on the south.

(3) Physical characteristics.

Songjin is on an alluvial plain at the mouth of a small river. Hills 400 to 600 feet high flank the plain. The compact section of the town is nearly rectangular in shape with extensions north and south along the coast and west along the river. The main part of the town is about 1.2 miles long from north to south and about 2 miles wide. The river divides the town into nearly equal parts. Streets are irregular in the northern part and in the southern extension, but have a rectangular pattern in other sections. The main street of the northern part and of the western extension is the highway from Ch'ongjin to Hamhung. (FIGURE VIII - 114). Commercial, administrative, and port facilities are concentrated in the southern half of the rectangular area (FIGURE VIII - 115). The northern section has a secondary commercial area.

(4) Factories.

The 2 principal industries are the Japan High Frequency Heavy Industry Company and the Nippon Magnesite Chemical Industries Company. The former is on the coast a short distance northeast of the town; the other may be nearby.



FIGURE VIII - 115. *Songjin*.
Airview of southern half of city, with harbor in foreground. Looking NW. 1931.

(5) Warehouses and storage.

Warehouse space and considerable open storage space are available near the southern waterfront.

(6) Billeting facilities.

There are 4 schools, one of them a commercial school.

(7) Health and sanitation.

There are 2 hospitals, both in the northern half of Songjin. The provincial hospital has 100 beds and an operating room; the private hospital has an estimated capacity of 30 beds. One of these is a 2-story red brick building ½ mile west of the railroad tunnel.

(8) Public utilities.

(a) *Water.* Songjin has a gravity water system which in 1936 supplied 38,632,909 gallons. Two distribution reservoirs are in the hills immediately behind the railroad station.

(b) *Power.* Power is obtained from the 4 Hoch'on-gang (Kyosen-kō) power plants, about 50 miles northwest, which have an estimated total installed capacity of 254,600 kilowatts. Industry consumes a large part of the supply.

(c) *Communications.* The telephone exchange is in the harbor area.

(9) Repair and service facilities.

Songjin has small railroad repair facilities.

F. Nanam (Ranan; 1939 estimated civilian population: 22,500).

(1) Importance.

Nanam, a short distance inland from the port of Ch'ongjin (Seishin), is the provincial capital of Hamgyong-pukto (North Kankyō). Its importance as a military center overshadows its other functions. (FIGURE VIII - 129).

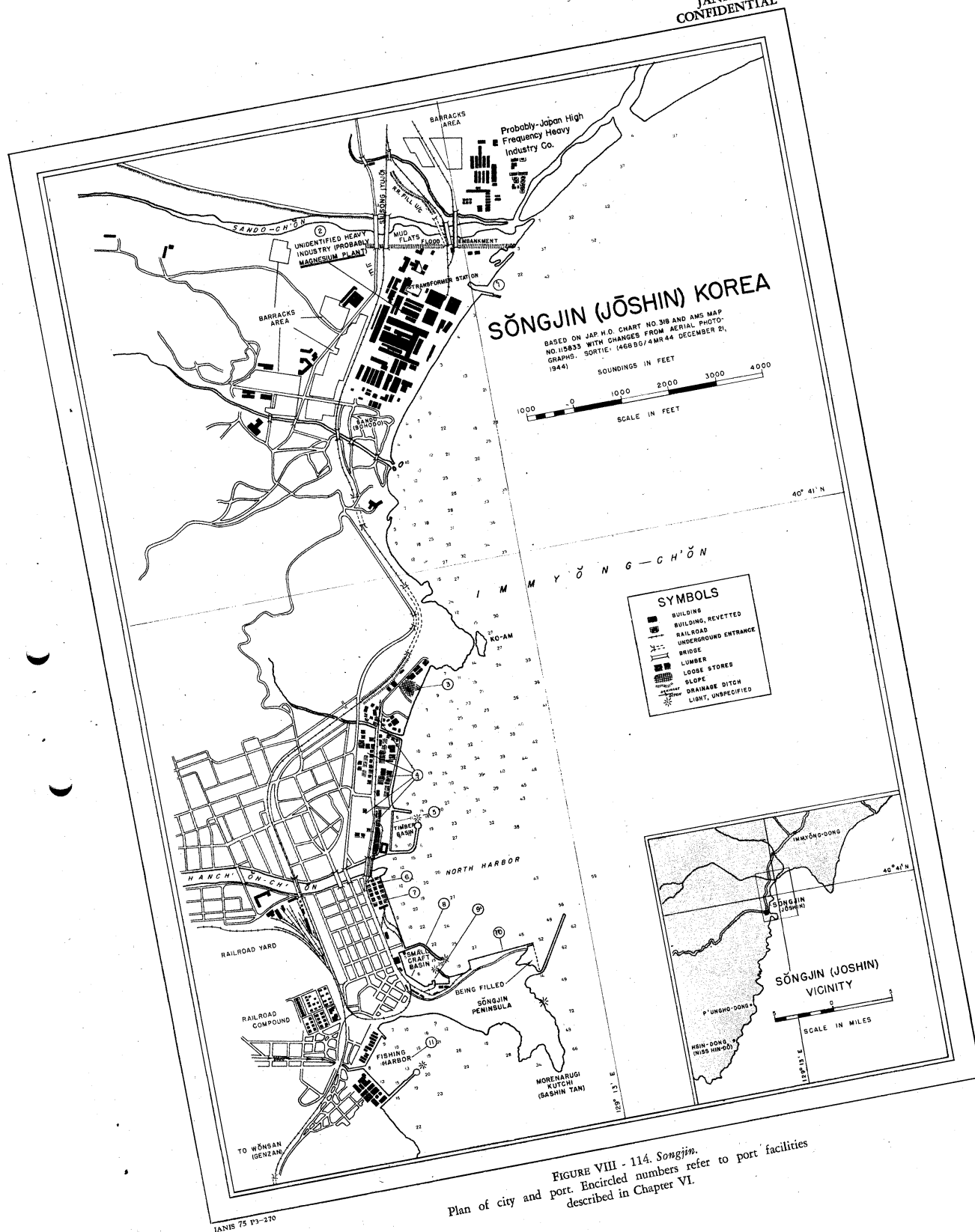
(2) Means of access.

The main single-track line from central Manchuria to Wonsan (Genzan) passes through Nanam. A single-track line branches off to Ch'ongjin a short distance north of Nanam.

The main coast road northward from Wonsan (Genzan) passes through Nanam. North of the town it branches and becomes a loop road through Ch'ongjin, Unggi (Yūki), Onsong (Onjō), Hoeryong (Kainci), and back to Ch'ongjin.

(3) Physical characteristics.

Nanam is a new town which has superseded the old walled town of Kyongsong (Kyōjō), a few miles to the southwest (not to be confused with the Kyongsong in west-central Korea). It lies in a basin surrounded by hills and is divided into unequal parts by the east-flowing Nanam-ch'on (river). The larger and more important northern part is semi-circular in shape, and is chiefly a Japanese residential section bordering an extensive barracks area; it has a regular street pattern composed of 2 grids meeting at an angle, and is marked by a large circle in the west. The southern part is a crowded area of irregular streets,



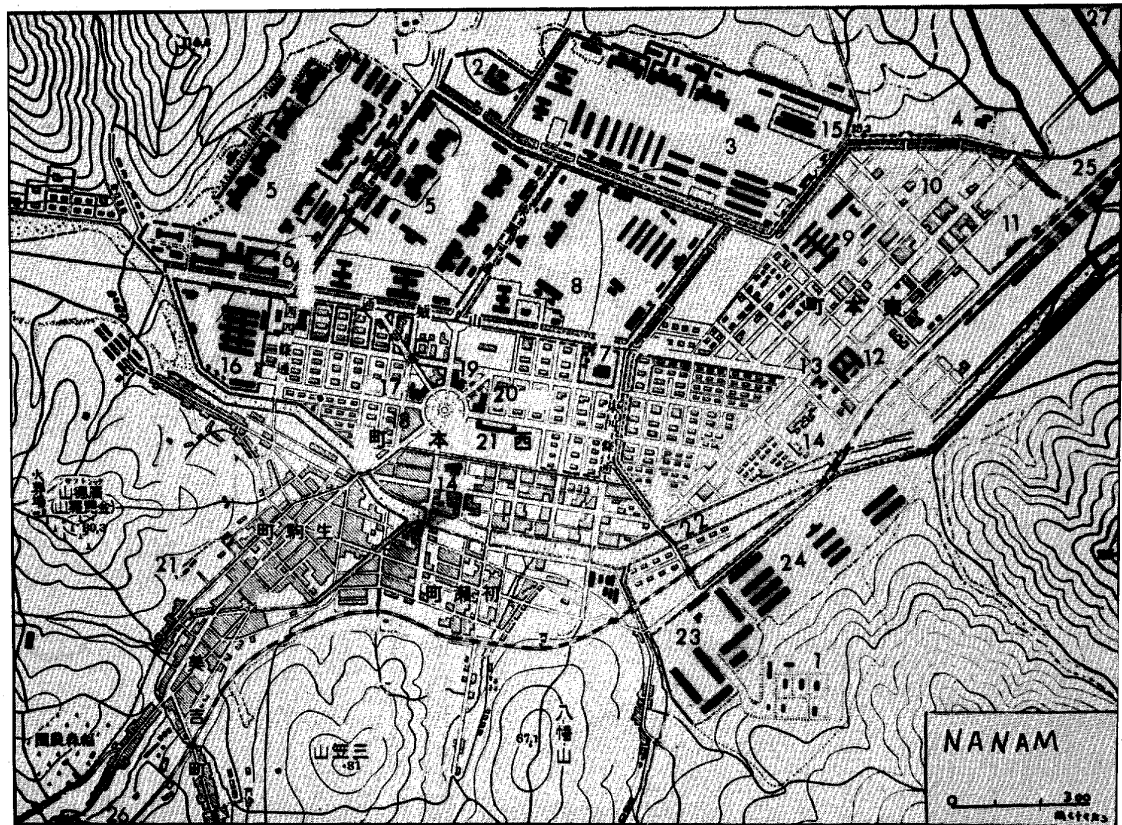


FIGURE VIII - 116. *Nanam.*
Town plan. Published 1931.

- | | | |
|------------------------------------|-----------------------------------|---|
| 1. Gunpowder magazine. | 10. Industrial center. | 19. Post office (main station). |
| 2. 19th Division headquarters. | 11. Nanam railway station. | 20. Bank of Chōsen (branch). |
| 3. Field artillery barracks. | 12. Provincial government office. | 21. Primary school. |
| 4. Governor's residence. | 13. Police station. | 22. Nanam-ch'on. |
| 5. Infantry barracks. | 14. Girls' school. | 23. Ordnance warehouse. |
| 6. Brigade headquarters. | 15. Middle school. | 24. Warehouses. |
| 7. Division commander's residence. | 16. Garrison hospital. | 25. Rail and road routes to Ch'ongjin and Hoeryong. |
| 8. Cavalry barracks. | 17. Amusement house. | 26. Rail and road routes to Hamhung. |
| 9. Nanam Hospital. | 18. Electric company office. | 27. Army drill ground. |



FIGURE VIII - 117. *Nanam.*
Airview of central park in the western part of the city. Looking NW.
Published 1931.

inhabited largely by Koreans; an extension follows the valley to the southwest toward Kyongsong (Kyōjō). (FIGURE VIII - 116).

The commercial center is around the large circle (FIGURE VIII - 117). Warehouse and administrative sections are near the railroad station in the eastern part of the town, and an industrial section is in the northeastern corner.

(4) *Billeting facilities.*

The garrison buildings include the 19th Division headquarters, a brigade headquarters, and barracks for 2 infantry regiments, a cavalry regiment, and an artillery regiment (FIGURES VIII - 116 and VIII - 118). Five schools, 3 of them large, afford additional facilities.

(5) *Health and sanitation facilities.*

Nanam has 2 hospitals, a 100-bed provincial hospital and a military hospital (FIGURE VIII - 118) with an estimated capacity of 100 beds.

(6) *Public utilities.*

Nanam had a waterworks which in 1936 supplied 144,355 gallons of water daily by natural gravity.

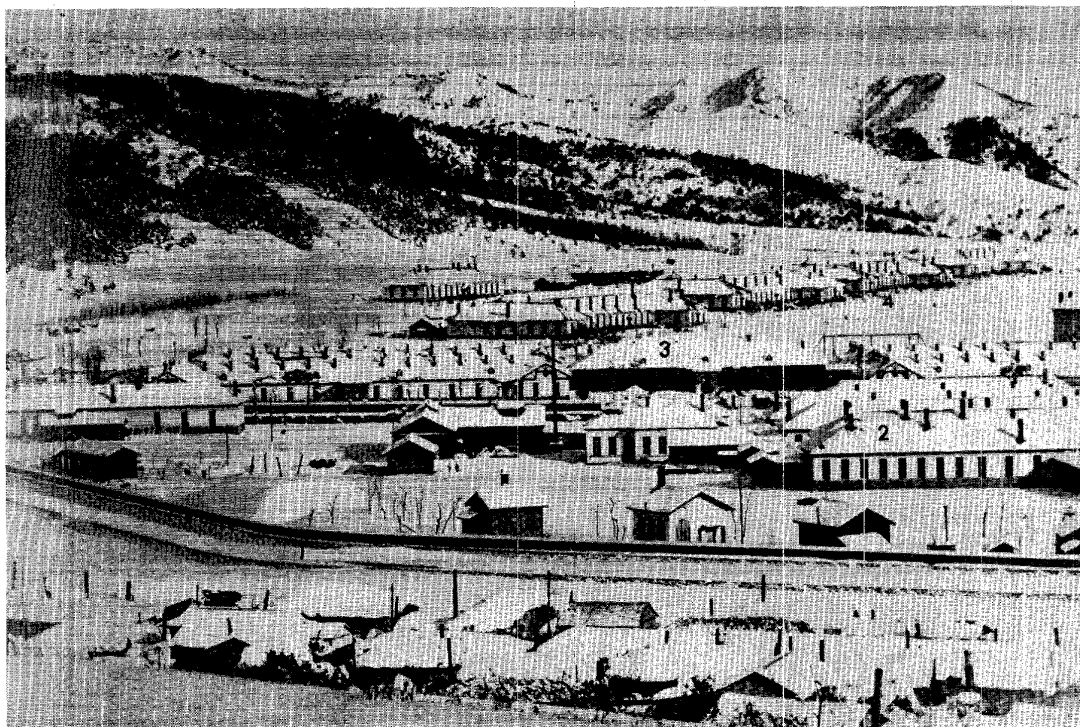


FIGURE VIII - 118. Nanam.

Garrison hospital and infantry barracks. Looking N. Published 1931.

1. Nanam-ch'on.

2. Garrison hospital.

3. Brigade headquarters.

4. Infantry barracks.

A steam power plant about $\frac{1}{2}$ mile northeast of the railroad station had an installed capacity of 2,000 kilowatts in 1937.

(7) Repair and service facilities.

Nanam has small repair shops.

G. Ch'ongjin (Seishin; 1940 population: 197,918).

(1) Importance.

Ch'ongjin, on an open bay along the northeast coast of Korea, is an important industrial and commercial port and a center of transit trade between Japan and Manchuria (FIGURE VIII - 129). It is one of the leading iron and steel centers in Korea, and has a large fish and bean oil industry.

(2) Means of access.

(a) Water. The principal port at Ch'ongjin accommodates ocean-going vessels and is used by important Japanese steamship lines from Niigata and Tsuruga. Two new ports are being developed southwest of the present port. (FIGURE VIII - 119).

(b) Rail. A short spur connects Ch'ongjin with the main east coast line from Hamhung (Kankō) and Wonsan (Genzan) on the south to Hoeryong (Kainei) and central Manchurian points on the north. The coastal line to Najin (Rashin) has probably been completed.

(c) Road. Ch'ongjin is the southern end of a loop line north through Unggi (Yūki), west through Onsong (Onjō), and south through Hoeryong. A road leads south to Hamhung.

(d) Air. There is an emergency landing ground 4 miles west of the city.

(3) Physical characteristics.

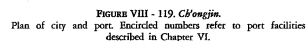
(a) Relation to surface features. The city lies partly on a bay-side strip backed by steep hills 600 feet high and partly on the plain of the Susong-ch'on (river) (FIGURE VIII - 120).

(b) Shape and dimensions. The principal section of Ch'ongjin lies along the waterfront and continues across the neck of a peninsula to a small fishing harbor. The peninsula forms the east side of the main harbor. The principal section is about 1.5 miles long and has projections into the valleys 900 to 2,700 feet long. An isolated section about 1.2 miles long and $\frac{1}{2}$ mile wide lies just west of the port area on the plain of the Susong-ch'on.

(c) Degree of compactness and chief open spaces. Nearly all of the principal section and the southern half of the isolated section are closely built up.

(d) Street plan. Streets which follow the alignment of the waterfront and the peninsular extension have a regular pattern. Those areas that extend up the small valleys are more irregular, and the principal streets follow the axis of the valley. The isolated section has a rectangular grid.

(e) Differentiated sections. The principal industrial area lies along the coast on the Susong-ch'on plain (FIGURE VIII - 121). The commercial and administrative center is at the eastern end of the principal port area. Warehouses are concentrated along the wharves on the north side of the port.



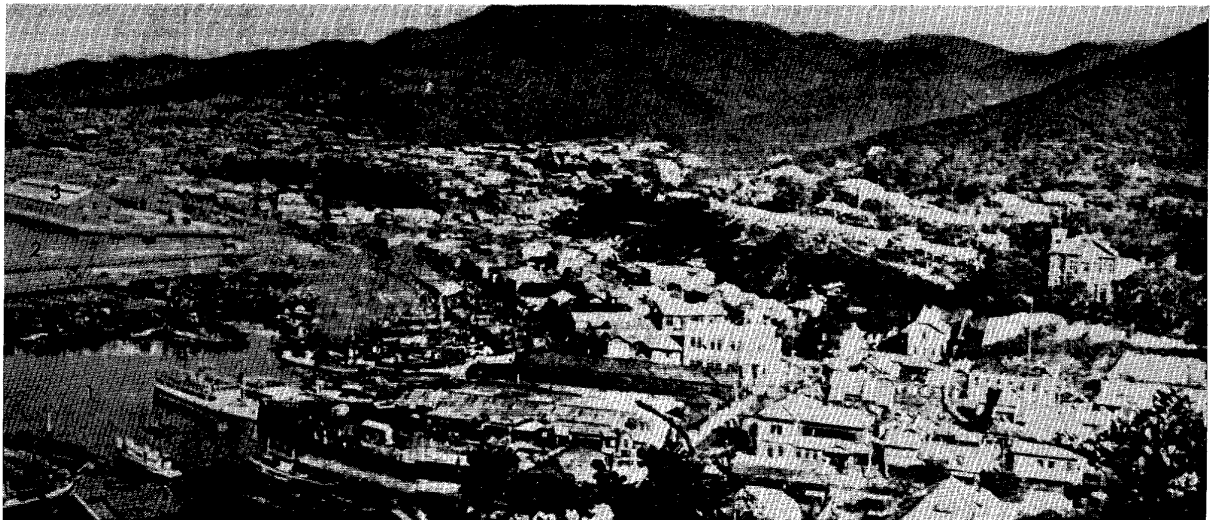
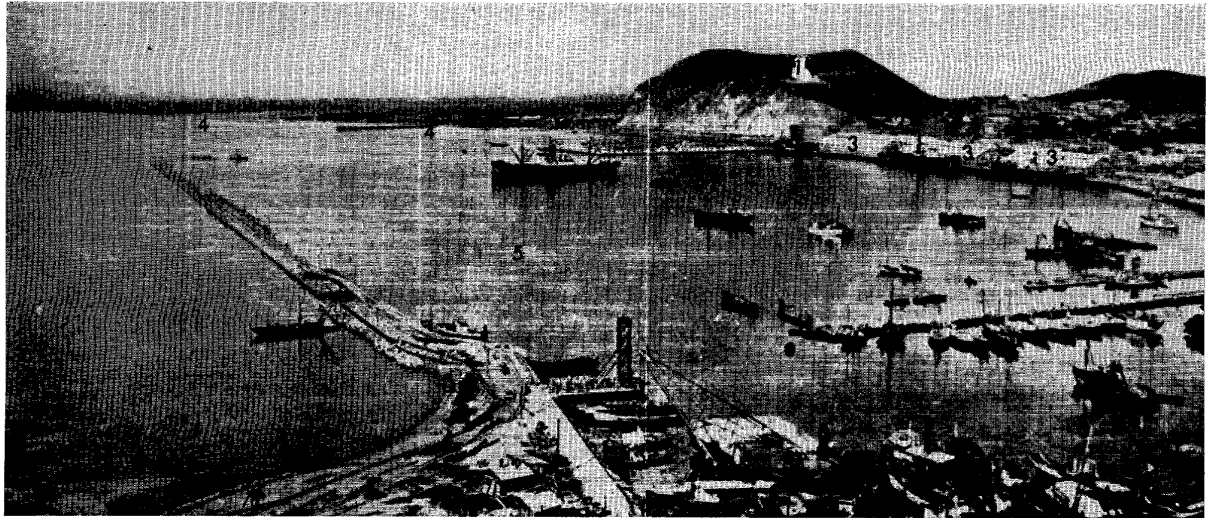


FIGURE VIII - 120. Ch'ongjin.
General view of city and harbor. Looking NW. 1935.

1. Radio station.
2. Post office.
3. Warehouses.

4. New port and industrial area.
5. Principal port area.
6. Small boat basin.

(4) *Factories.*

The Japan Iron Works, the Mitsubishi Iron Company, the North Korean Oil Refinery, and the Chōsen Fat Oil Company form a new industrial area along the coast west of the principal port area (FIGURE VIII - 121). The Kyodo Fat and Oil Company is in the central part of the peninsular development. The Japan Rayon Company is probably in the western industrial area. Carbide, magnesium, and synthetic oil plants are reported to be in operation.

(5) *Warehouses and storage.*

There are 215,000 square feet of warehouse space along the wharves (Figure VIII - 120). Other warehouses are associated with the factories in the western industrial area. Small warehouses and an oil storage area are just west of the isolated section

of the city. Cold storage facilities are in the southeast part of the principal port area.

(6) *Billeting facilities.*

There is an army barracks near the center of the principal section; 3 large groups of railroad dormitories and 4 schools, 2 of which are large, furnish additional facilities.

(7) *Health and sanitation facilities.*

(a) *Hospitals.* Ch'ongjin has a municipal hospital with an estimated capacity of 75 beds and a mission hospital with an estimated capacity of 20 beds. One of these is near the main wharf, and may be the hospital shown as a railroad hospital.

(b) *Sewage disposal.* In 1939 there were 4.3 miles of trunk line which drained 3 square miles. Sewage was discharged into the bay.

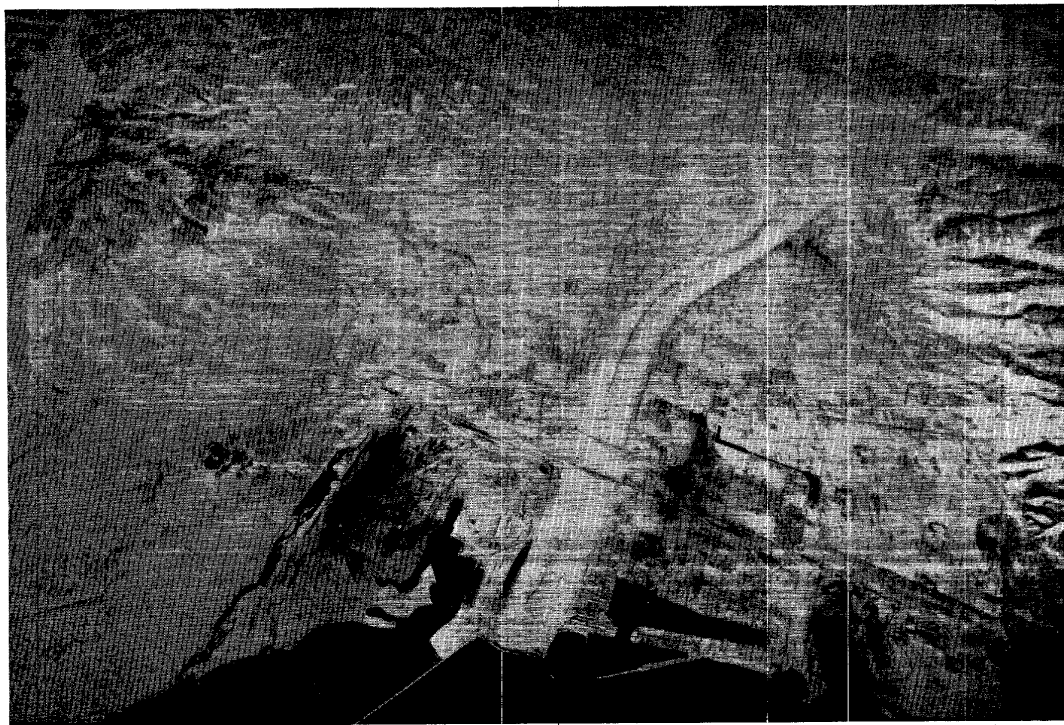


FIGURE VIII - 121. Ch'ongjin.

Oblique airview of new port and industrial development W of principal port area. Looking N. December 1944.

(8) Public utilities.

(a) *Water.* The city has a waterworks which supplied 910,000 gallons of water daily in 1939. The distribution reservoir is in a saddle between the 2 parts of the city.

(b) *Power.* The principal source of power is the Hoch'on-gang (Kyosen-kō; river) system of hydroelectric plants. There is also a steam plant with an installed capacity of 16,000 kilowatts at a calcium carbide plant.

(c) *Communications.* A 10,000-watt broadcasting station is on the prominent hill at the west end of the port area (FIGURE VIII - 120). There is also radiotelephone and radiotelegraph service, used chiefly by ships and planes.

(9) Repair and service facilities.

Large railroad repair shops are near the northern end of the isolated part of the city. The roundhouse and lesser facilities are about midway between the principal shops and the coast (FIGURE VIII - 121).

H. Najin (Rashin; 1940 population: 38,319).

(1) Importance.

Najin, on the northeast coast of Korea between Ch'ongjin (Seishin) and Unggi (Yūki), is an important military port for troops and supplies moving to central Manchuria (FIGURE VIII - 129). Both the town and harbor are under military control. Information on locations is very contradictory.

(2) Means of access.

(a) *Water.* Najin is a modern port which can accommodate deep-draft vessels. Traffic from Tsuruga, Japan, to Najin consists largely of troops and military supplies. (FIGURE VI - 7).

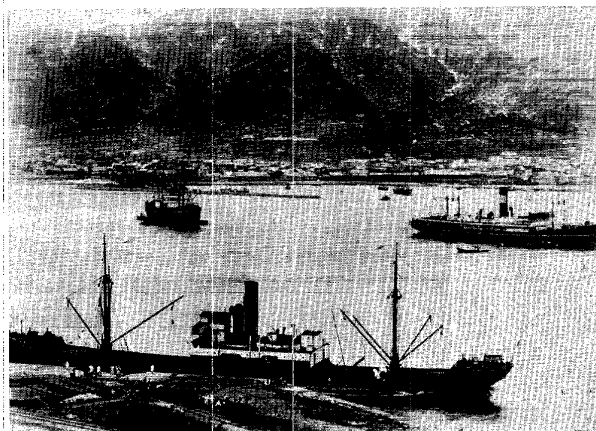


FIGURE VIII - 122. Najin.

General view of port and area W of Najin-sen. Looking NW.

(b) *Rail.* A single-track line extends north to Unggi and continues northwest to Hsin-pin (Hsing-ching) and Harbin in Manchuria. A line has been under construction and probably has been completed south to Ch'ongjin.

(c) *Road.* A loop road from Ch'ongjin passes through Najin, northwest through Onsong (Onjō) on the Manchurian border, and south through Hoeryong (Kainei) to Ch'ongjin.

(3) Physical characteristics.

Najin lies in the small valley of the Najin-ch'on (Rashin-sen) at the head of Najin-man (Rashin-wan; bay). Hills over 1,000 feet high rise steeply behind the town and the harbor (FIGURE VIII - 122). The vicinity of the port is the most

closely built-up part of Najin; sparsely settled sections cover the lower slopes. The eastern portion is an interlocking rectangular pattern which follows the general shape of the valley. A small part on the western side of the stream is a regular rectangular area. Other streets are straight but do not follow a regular plan. (PLAN 37). The town administrative offices are in the eastern part, and the port and military areas are on the west side of the stream (FIGURE VIII - 122). Modern buildings of brick and wood in bungalow style are common.

(4) *Warehouses and storage.*

Warehouses in the port area have an estimated capacity of 40,000 tons. Open storage is available in at least an equal amount.

(5) *Billeting facilities.*

(a) *Military barracks.* An extensive military camp overlooks the harbor from heights above the freight yards. A cavalry remount depot is in a small valley about 2 miles north of the port area. One anti-aircraft artillery regiment, one naval type 75 mm. battery and the remount depot were being maintained in December 1941.

(b) *Hotels.* The Yamato Hotel, owned by the railroad, was nearly completed in 1939. Other hotels were of native type.

(6) *Health and sanitation facilities.*

(a) *Hospitals.* The municipal hospital has a capacity of 20 beds and an operating room. The military hospital has an estimated capacity of 100 beds.

(b) *Sewage disposal.* In 1939 a trunk line of 39.1 miles drained an area of 1.2 square miles and discharged sewage into the river.

(7) *Public utilities.*

(a) *Water.* Najin has a waterworks. Its supply is reported to come from a small river about 20 miles south of the town. A 5-inch pipeline which parallels the road from Ch'ongjin carries the water to Najin.

(b) *Power.* Most of the supply comes from the 2 Pur-yong (Fūnei) plants, which have a combined capacity of 28,000 kilowatts. The Aoji-dong (Agochi-dō) steam plant, probably an auxiliary plant, had an estimated installed capacity of 5,000 kilowatts in 1937. The city itself has a large electric plant, owned and operated by the Unggi Electric Company.

(8) *Repair and service facilities.*

One marine railway for repair of small boats is west of the Najin-ch'on (Rashin-sen). Najin has small railroad repair shops.

I. Unggi (Yūki; 1937-1939 population: 22,085).

(1) *Importance.*

Unggi is a small deep-water port strategically located near the meeting of the Russian, Manchurian, and Korean borders (FIGURE VIII - 129). It is a fortified town under Japanese military command. It shares with Najin (Rashin) and Ch'ongjin (Seishin) in the important traffic between Japan and central Manchuria.

(2) *Means of access.*

(a) *Water.* Unggi is a port of call for coastwise vessels and ships from the west coast of Japan.

(b) *Rail.* A single-track line extends north to Namyang-dong (Nanyo-dō) on the Manchurian border and to Hsin-pin (Hsing-ching) and Harbin in central Manchuria. The same line continues to Najin, about 7 miles southwest. (FIGURE VIII - 123).

(c) *Road.* A loop road from Ch'ongjin passes through Unggi, northwest to Kyonghung (Keikō) and Hunyung (Kunjū) to Onsong (Onjō) along the Manchurian border and then south through Hoeryong (Kainei) to Ch'ongjin. A road branches from Kyonghung and connects through Manchuria with a main Siberian highway.

(3) *Physical characteristics.*

Unggi is on the east side of the Unggi-ch'on (river) near its mouth. Hills several hundred feet high rise abruptly behind the town and from the harbor southeast of the town. The opposite (western) side of the harbor is similarly lined with hills (FIGURE VIII - 123). The town is slightly more than a mile long from northwest to southeast and about ½ mile wide, and has an irregular outline. A small, detached area lies on the northern side of the river, between 3 bridges and the harbor. The main portion of the town is closely built, but there are several large open spaces within and adjacent to the railroad embankment which encircles the town (FIGURES VIII - 123 and VIII - 124). Several diagonal streets which originate in the port area traverse the length of the town. Cross streets intersect them at nearly right angles so that an approximately rectangular pattern is formed. (PLAN 47 and FIGURE VI - 1). The main street is wide but unpaved (FIGURE VIII - 125).



FIGURE VIII - 123. Unggi.
General view of town and harbor. Looking W.

- | | |
|---------------------------------|--|
| 1. Deep-water wharves. | 4. Rail line to Unggi station and Najin. |
| 2. Freight yard and warehouses. | 5. Railway bridges. |
| 3. Rail line to Manchuria. | 6. Small boat basin. |

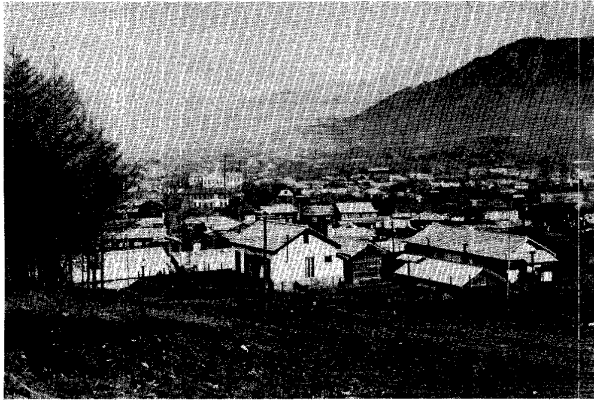


FIGURE VIII - 124. *Unggi*.
Houses in eastern part of town. Looking NW. 1934.

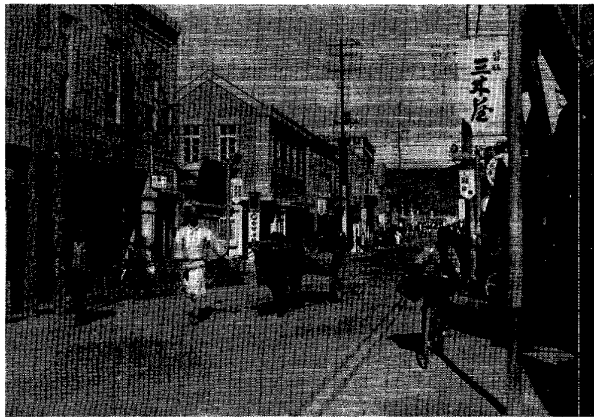


FIGURE VIII - 125. *Unggi*.
Main street of town. Probably looking E. Before 1937.

(4) *Factories.*

A small fish-processing factory operates only during the summer months.

(5) *Warehouses and storage.*

There are about 45,000 square feet of warehouse space in the port area.

(6) *Billeting facilities.*

(a) *Military barracks.* Facilities for one or two regiments are built on the hills overlooking both sides of the harbor.

(7) *Public utilities.*

Water is obtained from a reservoir in the hills west of the harbor. A pipeline carries the water to a storage tank along the railroad track and into the town. Water is also obtained from the Tuman-gang (river).

A steam plant at Aoji-dong (Agochi-dō) supplied power to Unggi. The installed capacity in 1937 was 5,000 kilowatts. A small powerhouse which generates about 400 horsepower is about a mile north of the town.

A fire station is at the extreme eastern end of the town.

8) *Repair and service facilities.*

There is a small shipyard which constructs cutters 70 to 80 feet long. It probably has facilities for minor repairs. Unggi has large modern railroad repair shops.

J. Hoeryong (Kainei; 1937-1939 population: 22,821).

(1) *Importance.*

Hoeryong, on the Manchurian border about 60 miles north of Ch'ongjin (Seishin), is primarily a military and transportation center (FIGURE VIII - 129). It also has important administrative and judicial functions.

(2) *Means of access.*

(a) *Rail.* Hoeryong is on the main line from Ch'ongjin to central Manchurian points by way of Namyang-dong (Nanyō-dō) and Sangsambong (Kamisambo), near the northern tip of Korea. A branch line runs to Shinkeirin, about 7 miles west of the town.

(b) *Roads.* Five roads focus on Hoeryong. Two lead north to Onsong (Onjō), one by an inland route and the other along the Tuman-gang (river); a third road goes south to Ch'ongjin and the fourth southwest to Musan (Mosan). A fifth road goes to Yen-chi in Manchuria. All roads had bus traffic. A regular schedule was in operation between Hoeryong and Unggi (Yūki).

(c) *Air.* An airfield with an area of about 16 acres has been reported about 1,000 feet west of the railroad.

(3) *Physical characteristics.*

Hoeryong lies in the broad valley floor on the right bank of the Hoeryong-ch'on (river), near its confluence with the Tuman-gang. Hills almost completely enclose the valley. The town is roughly rectangular; its long axis runs from northwest to southeast, nearly parallel to the Hoeryong-ch'on. It is approximately 2 miles long and $\frac{3}{4}$ mile wide. The center of the town is compact, but there are numerous open spaces on the periphery, particularly around the barracks and the railway station (FIGURES VIII - 126 and VIII - 127).

The main streets of Hoeryong (Honchō-dori on the long axis and Ginza-dori on the short axis) intersect near the center of the built-up area. Both streets, which are wide but unpaved, are the urban portions of the main highways through the town. Nearly all other streets are irregular and narrow.

The residential area is southwest of Homachō-dori; the commercial and administrative functions are concentrated along and northeast of Homachō-dori. There are a few warehouses near the railway station. The barracks area occupies about 18 acres at the southern end of the town.

(4) *Billeting facilities.*

In December 1941, an infantry regiment, an air regiment, and an engineer regiment were stationed at Hoeryong. The town has 2 missionary schools, an agricultural school, and 3 other schools. There are about 10 native inns with about 10 rooms each.

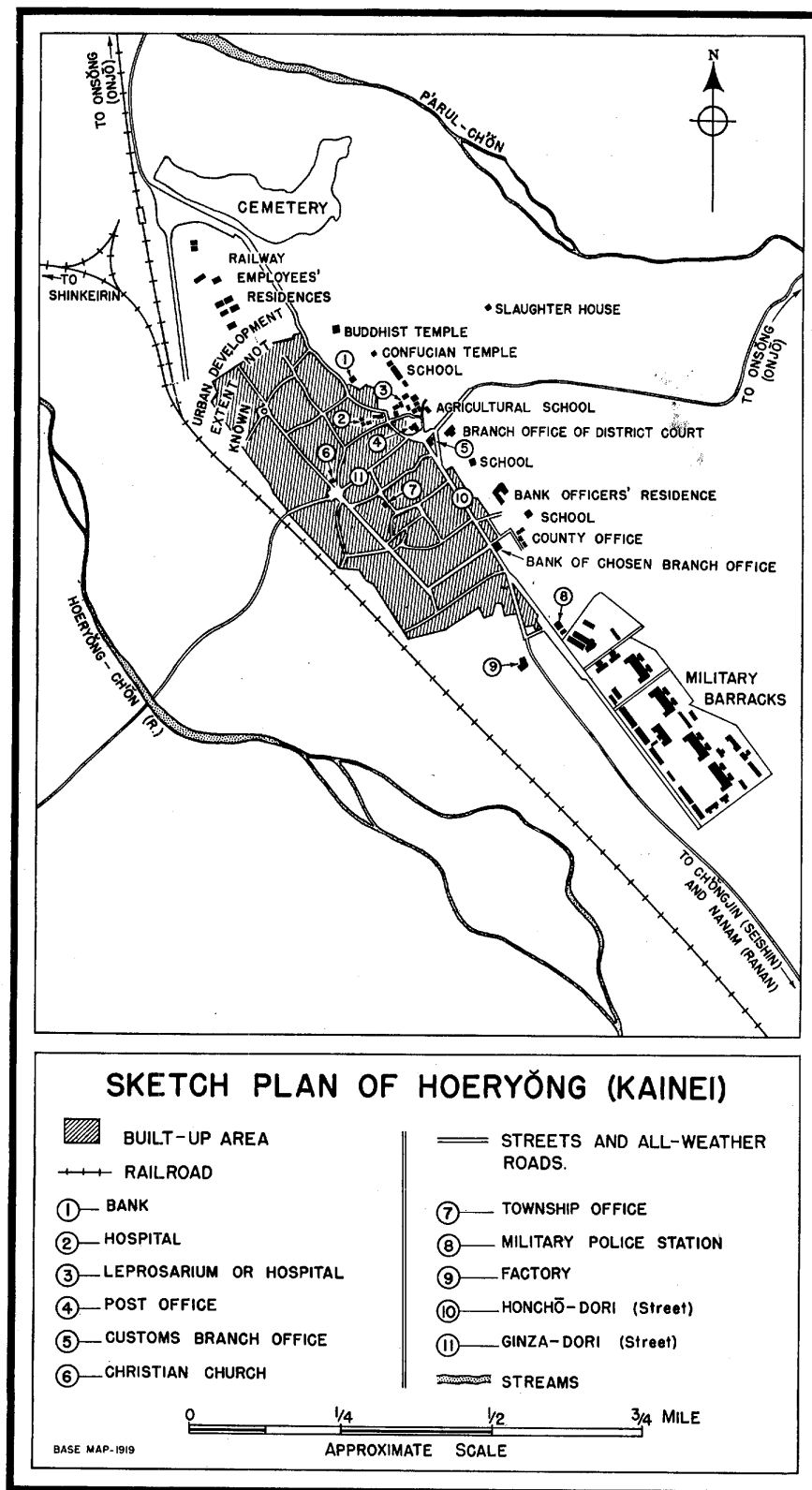


FIGURE VIII - 126. Hoeryong.
Sketch map.



FIGURE VIII - 127. Hoeryong.

General view of northern end of town; Hoeryong-ch'on in right background. Looking S. Published 1931.

(5) Health and sanitation facilities.

The town has a mission hospital with brick buildings and an estimated capacity of 40 beds, and a municipal hospital with an estimated capacity of 15 beds; both are near the center of the urban area.

(6) Buildings.

Administrative and judicial buildings include the county and township offices and a district court.

(7) Public utilities.

In 1936, the gravity water system supplied 238,904 gallons of water daily. A steam plant northeast of the town had an installed capacity of 2,000 kilowatts in 1938. Hoeryong had telephone and telegraph service and modern fire-fighting equipment.

(8) Repair and service facilities.

There are garages and probably a roundhouse at the station.

K. Musan (Moan).

Musan, on the Manchurian border about 50 miles northwest of Ch'ongjin (Seishin), is the chief center of iron ore

production in Korea (FIGURE VIII - 129). The mine and concentrating mills are the joint enterprise of the Mitsubishi Iron Company and Japan Iron Manufacturing Company. The population, attracted by the mine, is probably about 10,000.

Musan is the terminus of a branch from the main rail line between Ch'ongjin and Namyang-dong (Nanyō-dō); it is used mainly to transport the iron ore to Ch'ongjin. The line south through Paegam (Hakugan) to Kilchu (Kisshū) on the east coast line probably has been completed. Highways lead southeast to Ch'ongjin, northeast to Hoeryong (Kainei) and Onsong (Onjō), southwest to Hyesanjin (Keizanchin) near the border, and south to Kilchu.

The town is on the left bank of the Songch'on-su (Jōsen-sui) (river) near its confluence with the Tuman-gang; it lies on level ground which reaches west to the Tuman-gang. Hills rise abruptly to the southeast and across the Songch'on-su to the north. The town as a whole is closely built up with a few open spaces along the southwestern side. Nearly all streets are regular (FIGURE VIII - 128).

Musan is the seat of the county office and of a Japanese government office. The mining company operates a hospital



FIGURE VIII - 128. Musan.

General view of town; Sonch'onsu in right background. Looking NW. Published 1931.

with an estimated capacity of 75 beds. The town obtains power from the Hoch'on-gang (Kyosen-kō) system of hydroelectric plants, about 90 miles to the southwest, and is connected with the main telephone and telegraph networks.

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